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Pyrazole derivative and herbicid containing it.

1. A pyrazole derivative having the formula:

wherein A is alkyl, alkenyl or alkynyl; B is hydrogen, alkyl, halogen, haloalkyl, alkoxy, alkylthio, alkoxyalkyl, alkylthioalkyl or alkoxycarbonyl; X is alkyl, alkoxy, halogen, nitro, cyano, haloalkyl, alkoxyalkyl, alkylcarbonyl, alkoxycarbonyl, aminocarbonyl substituted by hydrogen or alkyl, haloalkoxy, alkylthio or alkylthioalkyl; Y is -COOR1 (wherein R1 is hydrogen, alkyl, etc.), -COO-L-OR1 (wherein L is alkylene which may be substituted), -COO-L-R2 (wherein R2 is phenyl group which may be substituted), -COO-M (wherein M is 3 to 6-membered alicyclic residue containing not more than 2 sulfur or oxygen atoms), -COO-L-M, -COO-L-O-L-R2, -COO-L-S(O)_n-R1, -CON(R3)(R4) (wherein each of R3 and R4 is hydrogen, alkyl etc.), a

(wherein R5 is alkyl),

-CONHSO₂CH₃, -CONHSO₂CF₃, -COO-L-N(R3)(R4), -COO-L-CO-R1, -COO-L-CO-R1, -COO-L-CN, -COO-L-NO₂, -COOSi(R5)₃, -COO-N = C(R6)(R7) (wherein each of R6 and R7 is alkyl),

-COO-L-O-SO₂-R1, -COO-L-O-CO-R1, -COO-L-O-R1, -COO-L-Si(R5)₃, -C(O)S-R1, -C(S)O-R1, -C(S)S-R1, -L-O-R1, -L-O-R8 (wherein R8 is hydrogen or alkyl), -L-O-M, -L-O-L-M, -L-NR8R9 (wherein R9 is alkyl group), -L-O-CH₂Ph, -L-O-L-COOR9, -L-CN, -L-S(O)_n-R1, -L-S-L-O-R9, -L-O-COR9, -L-O-SO₂R9, -L-COOR8, -C = CHOR8 or -L-O-L-CN; Z is halogen, nitro, alkoxy, trifluoromethyl, cyano or -S(O)_nR10 (wherein R10 is alkyl or haloalkyl); V is a hydrogen atom, a halogen atom, an alkyl group having from 1 to 4 carbon atoms or an alkoxy group having from 1 to 4 carbon atoms, which may be substituted, alkyl, alkoxy or hydroxyl), -S(O)₂R11, -P(O)(OR11)₂, -L-C(O)-R11, -

N(R12)(R13) (wherein each of R12 and R13 is hydrogen or alkyl), -L-R14 (wherein R14 is phenyl which may be substituted, alkyl, alkoxy or hydroxy), -L-N(R12)(R13), a -L-OR15 (wherein R15 is hydrogen, alkyl or alkenyl), -L-OC(O)R16 (wherein R16 is alkyl or alkoxy), -L-S(O)_nR15, -L-SC(O)R12,

(wherein each of L1 and L2 is methylene, oxygen or sulfur and R16 is hydrogen or alkyl), and a sait thereof, useful as a herbicide.

PYRAZOLE DERIVATIVE AND HERBICIDE CONTAINING IT

The present invention relates to novel 4-benzoylpyrazole derivatives and selective herbicides containing such derivatives as active ingredients, which are useful particularly as upland field herbicides.

Various herbicides have been developed for practical use from extensive research and development of herbicides for many years, and such herbicides have contributed to a reduction of the labor force required for controlling weeds or to improvement of the productivity of agricultural or horticultural plants.

Even now, it is still desired to develop a new herbicide having superior herbicidal properties. In particular, it is desired to develop an agricultural or horticultural herbicide which is capable of selectively controlling weeds without adversely affecting the crop plant and at a low dose. However, conventional herbicides do not necessarily provide such desired herbicidal properties.

On the other hand, certain compounds of 4-benzoylpyrazole derivatives are known to have herbicidal activities. For example, pyrazolate (common name) and pyrazoxyfen (common name) are practically used as herbicides for paddy fields. While exhibiting excellent herbicidal activities as paddy field herbicides, these compounds are not suitable as upland herbicides since their herbicidal activities are weak against weeds of upland fields. Among 4-benzoylpyrazole derivatives, it is desired to develop a superior compound useful as an upland field herbicide.

The present invention provides a pyrazole derivative having the formula:

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wherein A is an alkyl group having from 1 to 3 carbon atoms, an alkenyl group having from 2 to 4 carbon atoms or an alkynyl group having from 2 to 4 carbon atoms; B is a hydrogen atom, an alkyl group having from 1 to 3 carbon atoms, a halogen atom, a haloalkyl group having from 1 to 3 carbon atoms, an alkoxy group having from 1 to 3 carbon atoms, an alkylthio group having from 1 to 3 carbon atoms, an alkoxyalkyl group having from 2 to 4 carbon atoms, an alkylthioalkyl group having from 2 to 4 carbon atoms or an alkoxycarbonyl group having from 2 to 4 carbon atoms; X is an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms, a halogen atom, a nitro group, a cyano group, a haloalkyl group having from 1 to 6 carbon atoms, an alkoxyalkyl group having from 2 to 6 carbon atoms, an alkylearbonyl group having from 2 to 6 carbon atoms, an alkoxycarbonyl group having from 2 to 6 carbon atoms, an aminocarbonyl group substituted independently by hydrogen or alkyl having from 1 to 6 carbon atoms, a haloalkoxy group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms or an alkylthioalkyl group having from 2 to 6 carbon atoms; Y is a -COOR1 group (wherein R1 is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 3 to 8 carbon atoms, a cycloalkylalkyl group having from 4 to 8 carbon atoms, an alkynyl group having from 3 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, a haloalkyl group having from 1 to 6 carbon atoms, a halocycloalkyl group having from 3 to 8 carbon atoms, a haloalkynyl group having from 3 to 6 carbon atoms, a haloalkenyl group having from 2 to 6 carbon atoms or a phenyl group which may be substituted by alkyl having from 1 to 3 carbon atoms, halogen, nitro or alkoxy having from 1 to 3 carbon atoms), a -COO-L-OR1 group (wherein L is an alkylene group having from 1 to 6 carbon atoms which may be substituted by alkyl having from 1 to 3 carbon atoms, and R1 is as defined above), a -COO-L-R2 group (wherein L is as defined above, and R2 is a phenyl group which may be substituted by alkyl having from 1 to 3 carbon atoms, halogen, nitro or alkoxy having from 1 to 3 carbon atoms), a -COO-M group (wherein M is a 3 to 6-membered alicyclic residue containing not more than 2 sulfur or oxygen atoms and formed by a linkage of from 1 to 4 carbon atoms), a -COO-L-M group (wherein L and M are as defined above), a COO-L-O-L-R2 group (wherein L and R2 are as defined above), a -COO-L-S(O)_n-R1 group (wherein L and R1 are as

defined above, and n is an integer of from 0 to 2), a -CON(R3)(R4) group (wherein each of R3 and R4 is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 1 to 8 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms, an alkoxyl group having from 2 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, a haloalkyl group having from 1 to 6 carbon atoms, a haloalkyl group having from 2 to 6 carbon atoms, a haloalkynyl group having from 2 to 6 carbon atoms, a haloalkenyl group having from 2 to 6 carbon atoms or a phenyl group which may be substituted by alkyl having from 1 to 3 carbon atoms, halogen, nitro or alkoxy having from 1 to 3 carbon atoms), a

group (wherein n is an integer of from 4 to 6), a

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group (wherein R5 is an alkyl group having from 1 to 3 carbon atoms), a

group, a -CONHSO₂CH₃ group, a -CONHSO₂CF₃ group, a -COO-L-N(R3)(R4) group (wherein L, R3 and R4 are as defined above), a -COO-L-CO-R1 group (wherein L and R1 are as defined above), a -COO-L-CO-O-R1 group (wherein L and R1 are as defined above), a -COO-L-NO₂ group (wherein L is as defined above), a -COO-L-NO₂ group (wherein L is as defined above), a -COO-N = C(R6)(R7) group (wherein each of R6 and R7 which may be the same or different is an alkyl group having from 1 to 3 carbon atoms), a

group (wherein n is an integer of from 4 to 6), a -COO-L-O-SO₂-R1 group (wherein L and R1 are as defined above), a -COO-L-O-CO-R1 group (wherein L and R1 are as defined above), a -COO-L-O-L-O-R1 group (wherein L and R1 are as defined above), a -COO-L-Si(R5)3 group (wherein L and R5 are as defined above), a -C(O)S-R1 group (wherein R1 is as defined above), a -C(S)O-R1 group (wherein R1 is as defined above), a -C(S)S-R1 group (wherein R1 is as defined above), a -L-O-R1 group (wherein L and R1 are as defined above), a -L-O-L-O-R8 group (wherein L is as defined above, and R8 is a hydrogen atom or an alkyl group having from 1 to 6 carbon atoms), a -L-O-M group (wherein L and M are as defined above), a -L-O-L-M group (wherein L and M are as defined above), a -L-NR8R9 group (wherein R8 is as defined above, and R9 is an alkyl group having from 1 to 6 carbon atoms), a -L-O-CH₂Ph group (wherein L is as defined above), -L-O-L-COOR9 group (wherein L and R9 are as defined above), a -L-CN group (wherein L is as defined above), a -L-S(O)n-R1 group (wherein L and R1 are as defined above, and n is an integer of from 0 to 2), a -L-S-L-O-R9 group (wherein L and R9 are as defined above), a -L-O-COR9 group (wherein L and R9 are as defined above), a L-O-SO2R9 group (wherein L and R9 are as defined above), a -L-COOR8 group (wherein L and R8 are as defined above), a -CH = CHOR8 group (wherein R8 is as defined above) or a -L-O-L-CN group (wherein L is as defined above); Z is a halogen atom, a nitro group, an alkoxy group having from 1 to 3 carbon atoms, a trifluoromethyl group, a cyano group or a -S(O),R10 group (wherein R10 is an alkyl group having from 1 to 3 carbon atoms or a haloalkyl group having from 1 to 3 carbon atoms, and n is an integer of from 0 to 2); V is a hydrogen atom, a halogen atom, an alkyl group having from 1 to 4 carbon atoms or an alkoxy group having from 1 to 4 carbon atoms; W is a hydrogen atom, a halogen atom, an alkyl group having from 1 to 4 carbon atoms, a haloalkyl group having from 1 to 4 carbon atoms, an alkoxy group

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having from 1 to 4 carbon atoms, an alkoxyalkyl group having from 2 to 6 carbon atoms, an alkoxycarbonyl group having from 2 to 5 carbon atoms, a haloalkoxy group having from 1 to 3 carbon atoms, a nitro group, a cyano group or a -S(O)n-R group (wherein n is as defined above and R is an alkyl group having from 1 to 4 carbon atoms); Q is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms which may be substituted by halogen, an alkenyl group having from 1 to 6 carbon atoms which may be substituted by halogen, an alkynyl group having from 1 to 6 carbon atoms which may be substituted by halogen, a cyanomethyl group, a -C(O)-R11 group (wherein R11 is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of alkyl having from 1 to 6 carbon atoms, alkenyl having from 1 to 6 carbon atoms, alkynyl having from 1 to 6 carbon atoms, haloalkyl having from 1 to 6 carbon atoms, haloalkenyl having from 1 to 6 carbon atoms, haloalkynyl having from 1 to 6 carbon atoms, halogen, nitro and trifluoromethyl, an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms or a hydroxyl group), a -S(O)₂R11 group (wherein R11 is as defined above), a -P(O)(OR11)₂ group (wherein R1·1 is as defined above), a -L-C(O)-R11 group (wherein L and R11 are as defined above), a -L-C(O)-N(R12)(R13) (wherein L is as defined above, each of R12 and R13 is a hydrogen atom or an alkyl group having from 1 to 6 carbon atoms), a -L-R14 group (wherein L is as defined above, R14 is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of halogen, nitro and trifluoromethyl, an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms or a hydroxy group), a -L-N(R12)(R13) group (wherein L, R12 and R13 are as defined above), a -L-OR15 group (wherein R15 is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an alkenyl group having from 1 to 6 carbon atoms), a -L-OC(O)R16 group (wherein R16 is an alkyl group having from 1 to 6 carbon atoms or an alkoxy group having from 1 to 6 carbon atoms), a -L-S(O), R15 group (wherein R15 is as defined above, and n is an integer of 0 or 2), a -L-SC(O)R12 group (wherein R12 is as defined above),

(wherein each of L1 and L2 is a methylene group, an oxygen atom or a sulfur atom, R16 is a hydrogen atom or an alkyl group having from 1 to 3 carbon atoms, and n is an integer of 2 or 3), and a salt thereof.

The present invention also provides a selective herbicidal composition comprising a herbicidally effective amount of at least one pyrazole derivative of the formula I as defined above or its salt and an agricultural carrier or diluent.

Further, the present invention provides a method for selectively controlling weeds, which comprises applying the pyrazole derivative of the formula I as defined above or its salt to the locus to be protected.

Now, the present invention will be described in detail with reference to the preferred embodiments.

In the compound of the formula I of the present invention, A, B, X, Y, Z and Q are preferably selected from the following substituents, respectively:

A: Me, Et, n-Pr, i-Pr, CH2CH = CH2, CH2C=CH

B: H, Me, Et, n-Pr, i-Pr, C1, Br, CH₂C1, CF₃, OMe, OEt, OPr-i, SMe, CH₂OMe, CH₂SMe, CO₂Me, CO₂Et X: Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, s-Bu, t-Bu, OMe, OEt, OPr-n, OPr-i, OBu-n, OBu-i, OBu-s, OBu-t, F, C1, Br, I, NO₂, CN, CH₂F, CHF₂, CF₃, CH₂CF₃, CH₂C1, CC1₃, CHC1Me, CH₂CH₂C1, CHC1CH₂C1, CH₂Br, CHBrMe, CH₂CH₂Br, CH₂OMe, CH₂OEt, CH₂OPr-n, CH₂OPr-i, CH₂OBu-n, CH₂OBu-i, CH₂OBu-s, CH₂OBu-t, CHMeOMe, CHMeOEt, CHMeOPr-n, CHMeOPr-i, CHMeOBu-n, CHMeOBu-i, CHMeOBu-s, CHMeOBu-t, CH₂CH₂OMe, CH₂CH₂OEt, CH₂CH₂OPr-i, Ac, COEt, COPr-n, COPr-i, COOMe, COOEt, COOPr-i, CONHMe, CONHEt, CONMe₂, CONEt₃, CONEtMe, OCHF₂, OCF₃, OCH₂CF₃, SMe, SEt, CH₂SMe, CH₂SEt, CHMeSMe, CHMeSEt

Y : CH₂OH, CH₂OMe, CH₂OEt, CH₂OPr-n, CH₂OPr-i, CH₂OBu-n, CH₂OBu-i, CH₂OBu-s, CH₂OBu-t, CH₂OAm-n, CH₂OAm-i, CH₂OAm-t,

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$$CH_2OC_6H_{1:3}-n$$
, CH_2O , CH_2O , CH_2O , $CH_2OCH = CH_2$,

CH₂OCH₂CH = CH₂, CH₂OCH₂CMe = CH₂, CH₂OCHMeCH = CH₂, CH₂OCH₂C=CH, CH₂OCHMeC=CH, CH₂OCH₂CH₂CH, CH₂OCH₂CH, CH₂OCH₂CH, CH₂OCH₂CH, CH₂OCH₂CH, CH₂OCH₂CH, CH₂OCH₂CH, CH₂OCH₂CH, CH₂CH, CH₂OCH₂CH, CH₂CH, CH

CH2OCH2CC1 = CH2, CH2OCH2CC1 = CHC1, CH2OCH2CH2OMe, CH2OCH2CH2OEt, CH2OCH2CH2OPr-i,

25 CH₂OPh, CH₂OPh-C1-4, CH₂OPh-NO₂-4, CH₂NHMe, CH₂NHEt, CH₂NMe₂, CH₂NEt₄, CH₂NEtMe, CH₂OCH₂Ph, CH₂OCH₂COOMe, CH₂OCH₂COOEt, CH₂OCHMeCOOMe, CH₂OCH₃COOBu-t, CH₂OCHMeCOOEt, CH₂CN, CH₂SMe, CH₂SEt, CH₂SPr-n, CH₂SPr-i, CH₂SBn-t, CH₂SCh₂CH = CH₂, CH₂SCh₂C=CH,

CHMeOCH = CH₂, CHMeOCH₂CH = CH₂, CHMeOCH₂C=CH, CHMeOCH₂CF₃, CHMeOCH₂CL, CHMeOCH₂CCL₃,

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CHMeOCH₂CH₂Br, CHMeOCH₂
$$\stackrel{C}{\longleftarrow}$$
 C ℓ

CHMeOCH2CH2OMe, CHMeOCH2CH2Et,

CHMe0
$$\longrightarrow$$
 CHMe0 \longrightarrow .

CHMeOCH 2 S . CHMeOPh, CHMeNHMe,

CHMeNMe₂, CHMeNEt₃, CHMeOCH₂COOMe, CHMeOCH₂COOEt, CHMeOCHMeCOOMe, CHMeCN, CHMeSMe, CHMeSEt, CHMeSPr-n, CHMeSPr-i, CHMeSCH₂CH = CH₂, CHMeSCH₂C=CH,

CHMeSCH₂

25 CHMeSCH₂CH₂CL, CHMeSOMe, CHMeSOEt, CHMeSO₂Me, CHMeSO₂Et, CHMeSO₂Pr-i, CHMeSCH₂CH₂OMe, CHMeSPh, CHMeOAc, CHMeOCOEt, CHMeOSO₂Me, CHMeOSO₂Et, CHMeOCH₂CH₂CN, CMe₂OH, CMe₂OMe, CMe₂OEt, CMe₂OPr-n, CMe₂OPr-i, CMe₂OCH = CH₂, CMe₂OCH₂CH = CH₂, CMe₂OCH₂C=CH, CMe₂OCH₂CL,

CMezOCHzCHzOMe, CMezO — ,

Chezo , Cheznine, Chezninez,

CMe₂OCH₂COOMe, CMe₂CN, CMe₂SMe, CMe₂SEt, CMe₂SO₂Me, CMe₂SO₂Et, CMe₂OAc, CMe₂OSO₂Me, CH₂COOMe, CH₂COOMe, CH₂COOMe, CH₂COOMe, CH₂COOMe, CH₂COOMe, CH₂COOMe, CH₂CH₂COOMe, COOMe, COOMe, COOMe, COOMe, COOMe, COOPr-n, COOPr-i, COOBu-n, COOBu-i, COOBu-i, COOMe-i, COOAm-i,

COOCH 2

 $COOCH_2CH = CH_2$, $COOCH_2CH_2CH$, $COOCH_2CH_2CH$ $COOCH_2CH_2CH$, $COOCH_2CH$, COOCH, COOCH

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$$\label{eq:coch2cl} \begin{split} &\text{COOCH}_2\text{CC1} = \text{CH}_2, \ \text{COOCH}_2\text{CH}_2\text{OMe}, \ \text{COOCH}_2\text{CH}_2\text{OMe}, \ \text{COOCH}_2\text{CH}_2\text{OEt}, \ \text{COOCH}_2\text{CH}_2\text{SMe}, \ \text{COOCH}_2\text{CH}_2\text{SEt}, \ \text{COOCH}_2\text{CH}_2\text{SCH}_2\text{CH}_2\text{CL}_1, \ \text{COOCH}_2\text{CH}_2\text{SOMe}, \ \text{COOCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{CL}_1, \ \text{COOCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CL}_2, \ \text{COOCH}_2\text{CH$$

COOCH₂COMe, COOCH₂COB_U-t, COOCH₂COPr-i, COOCH₂COPh, COOCH₂COMe, COOCH₂COOEt, COOCHMeCOOMe, COOCMe₂OOMe, COOCH₂CH₂OCH₂CH = CH₂, COOCH₂CH₂OCH₂CH₂CH, COOCH₂CH₂OPh, COOCH₂CH₂OCH₂Ph, COOCH₂SiMe₃, COOSiMe₃, COOSiEt₃, COOPh, COOPh-C1-4, COOPh-Me-4, COOPh-NO₂-4, COOCH₂Ph, COOCH₂Ph-C1-2, COOCH₂Ph-C1-4, COOCHMePh, COOCH₂CH₂Ph,

$$coo \leftarrow coo \leftarrow coo$$

C(O)SMe, C(O)SEt, C(O)SPr-i, C(O)SPr-n, C(O)SBu-n, C(O)SBu-t, C(O)SBu-s, C(O)SBu-i, C(S)OMe, C(S)OEt, C(S)OPr-i, C(S)OPr-n, C(S)OBu-n, C(S)OBu-t, C(S)OBu-s, C(S)OBu-i, CSSMe, CSSEt, CSSPr-n, CSSPr-i, CONMe₂, CONHMe, CONEt₂, CONHEt, CONHPr-n, CONHPr-i, CONHBu-t, CONHBu-s, CONHBu-i, CONHBu-n, CONHAm-t, CONPr₂-i, CONPr₂-n, CONHPh, CONHPh-Me-4, CONHPh-NO₂-4,

55 CONMeOMe, CONHCH2CH = CH2, CON(CH2CH = CH2)2, CONHCH2C=CH, CON(CH2C=CH)2, CONMePh, CONEtPh, CON(Me)Ph-Me-4, CONHSO2Me, CONHSO2CF3, COON = CMe2,

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$$COON = \bigcirc$$
, $COON = \bigcirc$,

COOCH2OCOMe, COOCH2OCOBu-t,

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Z: F, C1,Br, I, NO₂, OMe, OEt, OPr-n, OPr-i, CF₃, CN, SMe, SOMe, SO₂Me, SCF₃, SOCF₃, SO₂CF₃ Q: H, Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, s-Bu, t-Bu, CH₂CH₂C1, CH₂CF₃, CHC1Me, CH₂CH₂Br, CHC1CH₂C1, CH₂CH = CH₂, CH₂CMe = CH₂, CH₂CH = CH₂, CH₂CMe = CH₂, CH₂CH = CH₂, CH₂CH = CH₂, CH₂CH = CH₂, CH₂Ph-C1-2, CH₂Ph-C1-3, CH₂Ph-Me-2,

CH₂Ph-Me₂-2,4, CH₂Ph-Me-4, CHMePh, CHEtPh, CH₂Ph-NO₂-2, CH₂Ph-CF₃-3, CH₂OMe, CH₂OEt, CH₂OH, CHMeOH, CH₂NHMe, CH₂NMe₂, CHMeNMe₂, CH₂COPh, CH₂COPh-NO₂-4, CH₂COPh-Me-4, CH₂COPh-Ct₂-4, CH₂COPh-Me₂-2,4, CH₂COPh-CF₃-4, CH₂AC, CH₂COEt, CHMeAC, CH₂CO₂Me, CH₂CO₂Et, CH₂CO₂Pr-n, CH₂CO₂Pr-i, CH₂CO₂Bu-t, CH₂CO₂H, CHMeCO₂H, CH₂CONHMe, CH₂CONMe₂, CH₂CONHEt, CH₂CONEt₂, CH₂CONPr-n₂, CH₂OCO₂Bu-t, CH₂OAC, CH₂COEt, CH₂COPr-i, CH₂COBu-t, CH₂OCO₂Me, CH₂OCO₂Et, CH₂OCO₂Pr-i, CH₂OCO₂Bu-t, CH₂SMe, CH₂SEt, CH₂SCH₂CH = CH₂, CH₂SAC, CH₂SCOBu-t, CH₂SO₂Me, CH₂SO₂Et, CH₂SO₂CH₂CH = CH₂, CH₂NHCO+Ct = CH₂, CH₂NHCO+Ct, CH₂NHCO₂Me, CH₂NHCO₂Me, CH₂NHCO₂Me, CH₂NHCO₂Me, COPh-NO₂-2, COPh-Ct₂-2,4, Ac, COEt, COPr-n, COPr-i, COBu-n, COBu-t, COCH₂Ct, COCHCt₂, COCCt₃, COCF₃, COCH₂OMe, COCH₂OPh, COCH₂CH = CHCH₃, CO₂Me, CO₂Et, CO₂Bu-t, CO₂Pr-i, CONHMe, CONMe₂, CONHEt, CONEt₂, CONPr-n₂, CON(CH₂CH = CH₂)₂, CONMePh,

CO₂CH₂Ph, CO₂Ph, SO₂Me, SO₂Et, SO₂CH₂CH = CH₂, SO₂Ph, SO₂Ph-Me-4, SO₂Ph-C1-4, SO₂Ph-(NO₂)₂-2,4, SO₂CF₃, P(=O)(OMe)₂, P(=O)(OEt)₂, P(=O)(OPr-n)₂, P(=O)(OPr-i)₂, P(=S)(OMe)₂, P(=S)(OEt)₂, P(=O)-OMeOPh, P(=O)(OCH₂CH = CH₂)₂, P(=O)OPhOCH₂CH = CH₂

When Q is a hydrogen atom, the compound may readily form a salt with a metal or with an organic base.

As such a metal, sodium, potassium, calcium, lithium, barium, magnesium, iron, copper, nickel or manganese may be mentioned.

As such an organic base, methylamine, dimethylamine, trimethylamine, ethylamine, diethylamine, triethylamine, n-propylamine, di-n-propylamine, i-propylamine, di-i-propylamine, n-butylamine, i-butylamine, sec-butylamine, tert-butylamine, piperidine, pyrrolidine, morpholine, pyridine, N,N-dimethylaniline or choline may be mentioned.

In the course of researches on the herbicidal properties of various organic compounds with an aim to develop useful herbicides, the present inventors have found that the above-mentioned compound of the present invention exhibits excellent herbicidal activities against narrow leaf weeds (gramineous and cyperaceous weeds) and against broad leaf weeds and no substantial phytotoxicity against useful plants e.g. crop plants such as Zea mays (corn), Sorghum bicolor (sorgo), Triticum spp (wheat) and Hordeum vulgare (barley). The present invention has been accomplished on the basis of this discovery.

The compound of the present invention exhibits strong herbicidal activities in each of soil treatment, soil incorporation treatment and foliage treatment. On the other hand, it exhibits no phytotoxicity against crop plants such as Zea mays, Sorghum bicolor, Triticum spp and Hordeum vulgare in a practical application in any of soil treatment, soil incorporation treatment and foliage treatment. Thus, the compound of the present invention has high selectivity and it is extremely effective for controlling weeds during the cultivation of these crop plants. Namely, the compound of the present invention exhibits strong herbicidal activities against noxious weeds such as Setaria viridis (green foxtail), Echinochloa crus-galli (barnyardgrass),

Amaranthus lividus (livid amaranth), Polygonum longisetum (persicaria blumei gross), Xanthium strumarium (cocklebur), Abutilon theophrasti (velvet leaf) and Cyperus esculentus (yellow nutsedge), which develop during the cultivation of Zea mays or Sorghum bicolor. The herbicidal activities against gramineous weeds and Cyperus esculentus are remarkably high and extremely unique. Heretofore, during the cultivation of Zea mays or Sorghum bicolor, it has been common to employ atrazine or cyanazine as a triazine-type herbicide, or alachlor or metolachlor as an acid anilide-type herbicide. However, atrazine and cyanazine have poor herbicidal activities against gramineous weeds although they show high activities against broad leaf weeds, and their activities against broad leaf weeds although their activities against gramineous weeds are high, and their activities against Cyperus esculentus are very poor. Thus, it has been difficult to eradicate all the weed species by a single application of such herbicides.

As a result of various studies, the present inventors have found the compound of the present invention which exhibits excellent herbicidal effects against a wide range of weeds, and the present invention has been accomplished on the basis of this discovery. The compound of the present invention also has a feature that it exhibits no phytotoxicity against crop plants such as Zea mays, Sorghum bicolor, Triticum spp and Hordeum vulgare and thus can safely be applied to the fields for such crop plants.

Further, the compound of the present invention includes a compound which shows selectivity between Oryza sativa (rice) and Echinochloa crus-galli (barnyardgrass), and it also includes a compound having selectivity for a useful plant such as Gossypium spp (cotton), Beta vulgaris (sugar beat) or Glycine max - (soybean).

Heretofore, it has been known that 4-benzoylpyrazole derivatives have excellent herbicidal activities. For example, pyrazolate (common name) is commercially available and widely used for practical application. However, such conventional herbicides are restricted in their application to paddy fields, and their activities are very poor in their application to upland fields. Whereas, as a result of extensive research for many years on 4-benzoylpyrazole derivatives, the present inventors have finally found that the compound of the present invention which simultaneously satisfies the various conditions for substituents in the structure as specified above, exhibits strong herbicidal activities in the application to upland fields in each of soil treatment, soil incorporation and foliage treatment. It has been found that the compound of the present invention exhibits particularly high activities against gramineous weeds and Cyperus esculentus.

The compound of the present invention can readily be prepared by any one of the following reactions.

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$$z \xrightarrow{Y} cooH + N \xrightarrow{N} oH$$

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$$z \xrightarrow{Y} coc \varrho + N \xrightarrow{N} oH$$

(3)

In the above formulas, A, B, X, Y, Z, Q, V and W are as defined above, E is a halogen atom, a m thanesulfonyloxy group or a p-toluenesulfonyloxy group. Further,

B
$$N$$
 N
 OH is a tautomer of N
 A

and may be represented by either formula. DCC is N,N'-dicyclohexylcarbodiimide.

Reaction scheme (1) represents a reaction wherein benzoic acid having suitable substituents and 5-hydroxypyrazole are reacted in an inert solvent in the presence of DCC and a base to obtain 4-benzoyl-5-hydroxypyrazole. DCC is used in an amount of from 1.0 to 1.5 mols per mol of the benzoic acid and pyrazole. The solvent may be any solvent so long as it is inert to the reaction. Particularly preferred is tert-butyl alcohol, tert-amyl alcohol or isopropyl alcohol. The base may not necessarily be required. However, in general, the yield can be improved by using a base. There is no particular restriction as to the base, but potassium carbonate or sodium carbonate may preferably be employed. The reaction temperature may range from room temperature to the boiling point of the solvent, but is preferably from 50 to 100°C.

The reaction time is usually from 0.5 to 20 hours.

Reaction scheme (2) shows a reaction wherein benzoyl chloride having suitable substituents and 5-hydroxypyrazole are reacted to form a benzoyl est r, which is then rearranged to a 4-benzoyl compound.

The benzoyl esterification can be accomplished in an inert solvent (such as an aromatic hydrocarbon, a fatty acid ester, a halogenated hydrocarbon, an ether, acetonitrile, dimethylsulfoxide or N,N'-dimethylformamide) or in a two phase system with such a solvent and water or in a mixture of such solvents in the presence of a suitable dehydrochlorinating agent (e.g. an inorganic base such as sodium hydroxide, potassium hydroxide or sodium hydrogencarbonate, or an organic base such as pyridine or triethylamine) at a temperature of from room temperature to 100°C for from 10 minutes to 5 hours.

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The rearrangement reaction can be accomplished by means of a Lewis acid such as anhydrous aluminum chloride or a base. As the base, potassium carbonate, calcium hydroxide or sodium carbonate may be used. The Lewis acid or base is used usually in an amount of from 1 to 10 mol times.

No solvent is required. However, in some cases, it is advantageous to use a solvent having a suitable boiling point to improve the operation efficiency or the yield. As such an advantageous example, use of dioxane or diglyme may be mentioned.

The reaction temperature is usually from 50 to 150°C, and the reaction time is usually from 15 minutes to 10 hours.

Reaction scheme (3) shows a reaction wherein 4-benzoyl-5-hydroxypyrazole is condensed with a halide, a methanesulfonic acid ester or a p-toluenesulfonic acid ester.

For this reaction, it is preferred to employ from 1 to 3 mol times of a dehydrohalogenating agent. As such a dehydrohalogenating agent, an inorganic base such as sodium hydroxide, potassium hydroxide, sodium carbonate, sodium hydrogencarbonate or potassium carbonate, or an organic base such as pyridine or triethylamine, may be mentioned.

There is no particular restriction as to the solvent so long as it is inert to the reaction. A wide range of solvents including an aromatic hydrocarbon, a fatty acid ester, a halogenated hydrocarbon, an ether, a ketone, an aliphatic hydrocarbon, acetonitrile, dimethylsulfoxide and dimethylformamide may be used.

The reaction temperature may be optionally selected within a range of from room temperature to the boiling point of the solvent. The reaction time is usually from 30 minutes to 30 hours.

Reaction scheme (4) shows a reaction wherein 4-benzoyl-5-hydroxypyrazole is converted to a 5-chloro compound by a chlorinating agent, followed by condensation with a suitable alcohol or acid.

As the chlorinating agent, phosphorus oxychloride, phosphorus pentachloride or thionyl chloride may be mentioned.

As the solvent, a wide range of solvents inert to the reaction, such as dimethylformamide, may be employed. However, the reaction can be conducted without any solvent.

The reaction temperature is preferably from 30 to 150°C, and the reaction time is usually from 30 minutes to 10 hours. In some cases, the reaction time may be shortened or the yield may be improved by an addition of a dehydrohalogenating agent.

The condensation reaction with an alcohol or acid is conducted by an addition of a dehydrohalogenating agent.

As such a dehydrohalogenating agent, a base such as sodium hydroxide, potassium hydroxide, sodium carbonate, potassium carbonate, sodium alkoxide or sodium hydride may be employed.

-The solvent may be any solvent which is inert to the reaction (such as an aromatic hydrocarbon, an ether, a ketone or N,N'-dimethylformamide). The reaction temperature may be selected within a range of from room temperature to the boiling point of the solvent.

The benzoic acids or benzoyl chlorides used as the starting materials for the compounds of the present invention may readily be prepared by a proper combination of various known syntheses. For instance, compounds wherein the substituent Z in the benzene ring is $-S(O)_nCH_3$ can be prepared in accordance with the following reaction schemes.

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In the above formulas, X, Y, V and W are as defined above, and Hal is a halogen atom.

Now, the preparation of benzoic acids will be described in detail with reference to Reference Examples. However, it should be understood that the present invention is by no means restricted by such specific Examples.

REFERENCE EXAMPLE 1

Preparation of 4-methanesulfonyl-3-methoxymethyl-2-methyl benzoic acid and 3-methoxymethyl-2-methyl-4-methylthio benzoic acid

(1) 2-Methyl-3-nitrobenzyl alcohol

39.0 g (0.2 mol) of methyl 2-methyl-3-nitrobenzoate was dissolved in 600 ml of tert-butanol, and 19.0 g of sodium borohydride was added thereto. Under refluxing, 150 ml of methanol was dropwise added thereto over a period of 1 hour. The refluxing was continued further for 1 hour to complete the reaction. The

reaction mixture was left to cool, and then water was added thereto. The solvent was distilled off under reduced pressure. To the residue, water and chloroform were added, and the organic layer was separated and dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain 30.7 g of 2-methyl-3-nitrobenzyl alcohol.

(2) 2-Methyl-3-nitrobenzyl methyl ether

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30.1 g (0.18 mol) of 2-methyl-3-nitrobenzyl alcohol obtained in the preceding step was dissolved in 200 ml of benzene, and 0.2 g of tetra-n-butylammonium bromide and a 50% aqueous solution of 20.1 g of sodium hydroxide were added thereto sequentially. Then, 27.2 g of dimethyl sulfate was dropwise added the retorat room temperature. Further, the reaction was conducted for 3 hours under stirring. Water was added to the reaction solution, and the organic layer was separated and washed sequentially with water, a 2% hydrochloric acid aqueous solution, water and a saturated sodium chloride aqueous solution. Then, the solvent was distilled off to obtain 30.9 g of 2-methyl-3-nitrobenzyl methyl ether as an oily substance.

(3) 3-Methoxymethyl-2-methylaniline

To 30.7 g (0.17 mol) of the above-mentioned 2-methyl-3-nitrobenzyl methyl ether, 200 ml of methanol was added. After the compound was dissolved in methanol, 92 ml of concentrated hydrochloric acid was gradually added thereto. Then, 30.4 g of iron powder was gradually added so that the reaction temperature became at a level of not higher than 60°C, and the reaction was continued further for 1 hour.

To the reaction solution, 300 ml of water was added, and sodium hydroxide was added until the pH became higher than 8. To the slurry thus obtained, chloroform was added, and the mixture was thoroughly stirred. Then, the solid was separated by filtration, and an organic layer was separated from the filtrate.

This organic layer was washed sequentially with water and a saturated sodium chloride aqueous solution and then dried over anhydrous sodium sulfate. Further, the solvent was distilled off under reduced pressure to obtain 23.1 g of 3-methoxymethyl-2-methylaniline as an oily substance.

(4) 3-Methoxymethyl-2-methyl-4-thiocyanoaniline

22.6 g (0.15 mol) of 3-methoxymethyl-2-methylaniline was dissolved in 300 ml of methanol. Then, 36.5 g of sodium thiocyanate was added thereto to obtain a uniform solution. This solution was cooled to 0°C, and 100 ml of a saturated methanol solution of sodium bromide with 25.2 g of bromine was dropwise added thereto so that the reaction temperature did not exceed 5°C. After the dropwise addition, the mixture was stirred at a temperature of not higher than 5°C for 1 hour and at room temperature for 1 hour to complete the reaction. The reaction solution was poured into 1 liter of water and neutralized with a 5% sodium carbonate aqueous solution. Chloroform was added to extract the oily substance. The chloroform layer was washed with water and a saturated sodium chloride aqueous solution and dried over anhydrous sodium sulfate. Then, the solvent was distilled off under reduced pressure to obtain 29.6 g of the desired product.

(5) 3-Methoxymethyl-2-methyl-4-methylthioaniline

29.1 g (0.14 mol) of 3-methoxymethyl-2-methyl-4-thiocyanoaniline was dissolved in 200 ml of ethanol and mixed with 100 ml of an aqueous solution containing 33.6 g of sodium sulfide nonahydrate at room temperature. Then, 21.9 g of methyl iodide was dropwise added thereto, and the mixture was reacted at room temperature for 3 hours. After completion of the reaction, the solvent was distilled off under reduced pressure, and water and chloroform were added to the residue. Then, the organic layer was separated and washed sequentially with water and a saturated sodium chloride aqueous solution and then dried over anhydrous sodium sulfate. The solvent was distilled off under reduced pressure to obtain 25.6 g of the desired product as an oily substance.

(6) 3'-lodo-2'-methyl-6'-methylthiobenzyl methyl ether

To 25.6 g (0.13 mol) of 3-methoxymethyl-2-methyl-4-methylthioaniline, 100 ml of water and 33 ml of concentrated hydrochloric acid were added to convert it to an aniline hydrochloride. This solution was cooled to 0°C, and 30 ml of an aqueous solution containing 9.3 g of sodium nitrite was dropwise added thereto so that the reaction temperature did not exceed 5°C. After completion of dropwise addition, stirring was continued further for 30 minutes to complete diazotization. 100 ml of an aqueous solution containing 33 g of potassium iodide was heated to 70°C, and the aqueous solution of the diazonium salt obtained above was gradually added thereto and decomposed. The reaction solution was stirred further for 1 hour at 70°C and then left to cool. The oil component was extracted with benzene. The benzene layer was washed sequentially with water, a saturated sodium hydrogensulfite aqueous solution, water and a saturated sodium chloride aqueous solution. Then, the solvent was distilled off under reduced pressure, and the residue was purified by column chromatography (eluent: benzene) to obtain 30.0 g of the desired product. Melting point: 56.0 - 59.0°C.

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(7) 3-Methoxymethyl-2-methyl-4-methylthiobenzoic acid

27.7 g (0.09 mol) of 3'-iodo-2'-methyl-6'-methylthiobenzyl methyl ether was dissolved in 100 ml of dried tetrahydrofuran, and 63 ml of a 1.5 M n-butyllithium n-hexane solution was dropwise added thereto at -70°C. After the dropwise addition, the mixture was stirred for 15 minutes at the same temperature, and then dried carbon dioxide gas was thoroughly blown into the reaction solution until the heat generation of the reaction solution stopped. After the reaction, the temperature of the solution was returned to room temperature, and water and diethyl ether were added for liquid separation. The aqueous layer thus obtained was further washed twice with diethyl ether, and then concentrated hydrochloric acid was added to bring the pH<1. Precipitated crystals were collected by filtration, thoroughly washed with water and dried to obtain 14.4 g of the desired product. Melting point: 192.0 - 194.0°C

(8) 4-Methanesulfonyl-3-methoxymethyl-2-methylbenzoic acid

To 11.3 g (0.05 mol) of 3-methoxymethyl-2-methyl-4-methylthiobenzoic acid, 120 ml of acetic acid and 120 ml of a 35% hydrogen peroxide aqueous solution were added, and the mixture was reacted at 80°C for 1 hour. After cooling, the reaction solution was poured into ice water, whereupon precipitated crystals were collected by filtration, then washed with water and dried to obtain 12.3 g of the desired product. Melting point: 129.0 - 131.0°C.

REFERENCE EXAMPLE 2

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Preparation of 3-methoxycarbonyl-2-methyl-4-methylthiobenzoic acid and 4-methanesulfonyl-3-methoxycarbonyl-2-methylbenzoic acid

(1) Methyl 3-amino-2-methylbenzoate

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40 g of methyl 2-methyl-3-nitrobenzoate was dissolved in 120 ml of methanol, and 157 g of concentrated hydrochloric acid was added thereto. Then, 36.8 g of iron powder was gradually added while maintaining the mixture at a temperature of not higher than 60°C. The mixture was stirred at room temperature for 4 hours and then poured into 1 liter of ice water. The solution was neutralized with sodium carbonate and extracted with chloroform (after filtering off insolubles). The extract was washed with a saturated sodium chloride aqueous solution and dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain 27.8 g of the desired product as an oily substance.

(2) Methyl 3-amino-2-methyl-6-thiocyanobenzoate

While maintaining a solution comprising 27.7 g of methyl 3-amino-2-methylbenzoate, 41.5 g of sodium thiocyanate and 250 ml of methanol at a temperature of not higher than 0°C, 100 ml of sodium bromide-saturated methanol with 28.1 g of bromine was slowly dropwise added thereto. The mixture was stirred at room temperature for 3 hours and then poured into 1 liter of ice water. The solution was neutralized with sodium carbonate and then extracted with chloroform. The extract was washed with a saturated sodium chloride aqueous solution and dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain 34.0 g of the desired product as an oily substance.

(3) Methyl 3-amino-2-methyl-6-methylthiobenzoate

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To a solution comprising 39.5 g of sodium sulfide nonahydrate and 110 ml of water, a solution comprising 32.9 g of methyl 3-amino-2-methyl-6-thiocyanobenzoate and 300 ml of ethanol was dropwise added. The mixture was stirred at room temperature for 1.5 hours, and 24.0 g of methyl iodide was dropwise added under cooling with ice. The mixture was stirred further at room temperature for 2 hours and then concentrated under reduced pressure. A saturated sodium chloride aqueous solution was added thereto, and the mixture was extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain 30.1 g of the desired product as an oily substance.

(4) Methyl 3-iodo-2-methyl-6-methylthiobenzoate

28 g of methyl 3-amino-2-methyl-6-methylthiobenzoate was stirred in 150 ml of concentrated hydrochloric acid at room temperature for 2 hours to convert it to a hydrochloride. Then, while maintaining the mixture at a temperature of not higher than 0°C, a solution comprising 11.9 g of sodium nitrite and 20 ml of water was dropwise added thereto to obtain a diazonium salt solution. The diazonium salt solution was dropwise added to a solution comprising 28.4 g of potassium iodide and 90 ml of water while maintaining the solution at 80°C. After completion of the dropwise addition, the mixture was stirred at 80°C for 15 minutes and left to cool. Water was added thereto, and the mixture was extracted with chloroform. The extract was washed with an aqueous sodium hydrogensulfite solution and water and then dried over anhydrous sodium sulfate. The solvent was distilled off to obtain 40 g of the desired product as a crude product. The crude product was purified by silica gel column chromatography (eluted with benzene) to obtain 36.0 g of a purified product as an oily substance.

(5) 3-Methoxycarbonyl-2-methyl-4-methylthiobenzoic acid

While maintaining a solution comprising 20.0 g of methyl 3-iodo-2-methyl-6-methylthiobenzoate and 70 ml of dried tetrahydrofuran at a temperature of not higher than -60°C under a nitrogen atmosphere, 42 ml of a 1.5 M n-butyllithium n-hexane solution was dropwise added thereto. Fifteen minutes later, dried carbon dioxide gas was thoroughly blown into the mixture while maintaining it at a temperature of not higher than -50°C. After purging carbon dioxide gas with nitrogen, 12.7 g of diisopropylamine was dropwise added th reto, and the mixture was stirred until the temperature reached room temperature. The mixture was concentrated under reduced pressure. Water was added thereto and the mixture was washed with chloroform. The aqueous solution was acidified with concentrated hydrochloric acid and then extracted with chloroform. The extract was dried over anhydrous sodium sulfate. The solvent was distilled off to obtain 7.5 g of the desired product. Melting point: 178 - 178.5°C.

(6) 4-Methanesulfonyi-3-methoxycarbonyl-2-methylbenzoic acid

A solution comprising 5.0 g of 3-methoxycarbonyl-2-methyl-4-methylthiobenzoic acid, 25 ml of acetic acid and 25 ml of hydrogen peroxide (35%) was stirred at .80°C for 3 hours. After cooling, the mixture was poured into ice water and extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain 5.1 g of the desired product. Melting point: 151 - 152°C

REFERENCE EXAMPLE 3

Preparation of 2-chloro-3-ethylthiomethyl-4-methanesulfonylbenzoic acid

(1) Methyl 3-bromomethyl-2-chloro-4-methanesulfonylbenzoate

12.1 g of methyl 2-chloro-4-methanesulfonyl-3-methylbenzoate was dissolved in 250 ml of carbon tetrachloride, and the solution was refluxed under stirring. Then, 7.5 g of bromine and 1 g of benzoyl peroxide were gradually added thereto over a period of 30 minutes, and the solution was further refluxed for 4 hours under heating. After cooling, 200 ml of chloroform was added thereto, and the mixture was washed with a 5% sodium hydrogensulfite aqueous solution. The organic layer was separated and dried over anhydrous sodium sulfate. The solvent was distilled off under reduced pressure to obtain a crude product. The crude product was washed with ethyl ether to obtain 13.2 g of crystals of the desired product. Melting point: 77 - 78°C

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(2) Methyl 2-chloro-3-ethylthiomethyl-4-methanesulfonylbenzoate

To 100 ml of tetrahydrofuran, 1.3 g of ethanethiol and 1.5 g of potassium carbonate and then 4.4 g of methyl 3-bromomethyl-2-chloro-4-methanesulfonylbenzoate were added, and the mixture was stirred for 1 day at room temperature. Then, the mixture was stirred further for 1 hour at a temperature of from 50 to 60°C. After cooling, chloroform was added thereto, and the mixture was washed with a dilute potassium carbonate aqueous solution. The chloroform layer was separated and dried. Then, the solvent was distilled off to obtain 4.1 g of methyl 2-chloro-3-ethylthiomethyl-4-methanesulfonylbenzoate as an oily substance.

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(3) 2-Chloro-3-ethylthiomethyl-4-methanesulfonylbenzoic acid

To a solution mixture comprising 50 ml of a 10% sodium hydroxide aqueous solution and 150 ml of methanol, 3.9 g of methyl 2-chloro-3-ethylthiomethyl-4-methanesulfonylbenzoate was added, and the mixture was stirred at room temperature for 30 minutes. Methanol was distilled off under reduced pressure, and a dilute hydrochloric acid was added to the residue for acid precipitation. The mixture was extracted with ethyl acetate, and the extract was dried. Then, the solvent was distilled off to obtain 3.5 g of the desired product. Melting point: 172 - 174°C.

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REFERENCE EXAMPLE 4

Preparation of 2-chloro-4-methanesulfonyl-3-methoxymethylbenzoic acid

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(1) Methyl 2-chloro-4-methanesulfonyl-3-methoxymethylbenzoate

To a solution comprising 12.0 g of methyl 3-bromomethyl-2-chloro-4-methanesulfonylbenzoate prepared in Reference Example 3(1) and 100 ml of methanol, 50 ml of a methanol solution containing 1.7 g of sodium methoxide was added, and the mixture was stirred at room temperature overnight. The solvent was distilled off under reduced pressure. Then, dilute hydrochloric acid was added to the residue, and the mixture was extracted with chloroform. The extract was washed with water and dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain 9.5 g of the desired product as a crude product. The crude product was purified by silica gel column chromatography (eluted with benzene) to obtain 7.5 g of a purified product as an oily substance.

(2) 2-Chloro-4-methanesulfonyl-3-methoxymethylbenzoic acid

To a solution comprising 3.0 g of methyl 2-chloro-4-methanesulfonyl-3-methoxymethylbenzoate and 20 ml of methanol, a solution comprising 0.57 g of sodium hydroxide (93%) and 2 ml of water was added, and the mixture was stirred at room temperature for 30 minutes. After an addition of 10 ml of water, the mixture was concentrated under reduced pressure. Then, dilute hydrochloric acid was added thereto, and the mixture was extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain 2.6 g of the desired product. Melting point: 137 - 141°C.

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REFERENCE EXAMPLE 5

<u>Preparation</u> of <u>2-chloro-4-methanesulfonyl-3-methoxymethylbenzoic</u> acid (alternative method of Reference Example 4)

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The desired product was prepared in the same manner as in Reference Example 1. Melting point: 137 - 141 °C

The physical properties of the intermediates were as follows:

- (1) 2-Chloro-3-nitrobenzyl alcohol: Oily substance
- (2) 2'-Chloro-3'-nitrobenzyl methyl ether: Oily substance
- (3) 2-Chloro-3-methoxymethylaniline: Oily substance
- (4) 2-Chloro-3-methoxymethyl-4-thiocyanoaniline: Melting point: 90 96°C
- (5) 2-Chloro-3-methoxymethyl-4-methylthioaniline: Oily substance
- (6)2'-Chloro-3'-iodo-6'-methylthiobenzyl methyl ether: Melting point: 53 56°C

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REFERENCE EXAMPLE 6

Preparation of 2-chloro-4-methanesulfonyl-3-methoxycarbonyl benzoic acid

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The desired product was prepared in the same manner as in Reference Example 2. Melting point 160 - 162°C

The physical properties of the intermediates were as follows:

- (1) Methyl 3-amino-2-chlorobenzoate: Oily substance
- (2) Methyl 3-amino-2-chloro-6-thiocyanobenzoate: Melting point: 80 83°C
- (3) Methyl 3-amino-2-chloro-6-methylthiobenzoate: Melting point: 70 72°C
- (4) Methyl 2-chloro-3-iodo-6-methylthiobenzoate: Oily substance
- (5) 2-Chloro-3-methoxycarbonyl-4-methylthiobenzoic acid: Melting point: 176 179°C

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REFERENCE EXAMPLE 7

Preparation of 4-methanesulfonyl-3-[(2-methoxyethyl)oxycarbonyl]-2-methylbenzoic acid

The desired compound was prepared in the same manner as in Reference Example 2. Melting point: . 118 - 121 °C

The physical properties of the intermediates were as follows:

- (1) 2-Methoxyethyl 3-amino-2-methylbenzoate: Oily substance
- (2) 2-Methoxyethyl 3-amino-2-methyl-6-thiocyanobenzoate: Melting point: 79 81 °C
- (3) 2-Methoxyethyl 3-amino-2-methyl-6-methylthiobenzoate: Oily substance
- (4) 2-Methoxyethyl 3-iodo-2-methyl-6-methylthiobenzoate: Oily substance
- (5) 3-[(2-methoxyethyl)oxycarbonyl]-2-methyl-4-methylthiobenzoic acid: Melting point: 90 93°C

55 REFERENCE EXAMPLE 8

<u>Preparation of 2-m thyl-4-methylthio-3-n-propoxycarbonylbenzoic acid and 4-methanesulfonyl-2-methyl-3-n-propoxycarbonylbenzoic acid</u>

(1) Methyl 3-bromo-2-methyl-6-methylthiobenzoate

16.1 g of the compound of Reference Example 2(3) was stirred in 150 ml of hydrobromic acid (48%) to convert it into a hydrobromide. While maintaining the solution at a temperature of not higher than 0°C, a solution comprising 7.2 g of sodium nitrite and 20 ml of water was dropwise added to obtain a diazonium salt solution. The diazonium salt solution was dropwise added to a solution comprising 6.0 g of cuprous bromide and 7.7 g of hydrobromic acid (48%) while refluxing the solution under heating. After completion of the dropwise addition, the mixture was further refluxed for 1 hour under heating and then left to cool. Ice water was added thereto, and the mixture was extracted with chloroform. The extract was washed with an aqueous sodium hydrogensulfite solution and water and then dried over anhydrous sodium sulfat. The solvent was distilled off to obtain 19.2 g of the desired product as a crude product. The crude product was purified by silica gel column chromatography (eluted with benzene) to obtain 17.1 g of a purified product as an oily substance.

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(2) 3-Bromo-2-methyl-6-methylthiobenzoic acid

To 100 ml of an ethanol solution containing 17.0 g of methyl 3-bromo-2-methyl-6-methylthiobenzoate, 16 g of a 50% sodium hydroxide aqueous solution was added, and the mixture was refluxed for 3 hours under heating. The reaction mixture was concentrated under reduced pressure. Then, water was added thereto, and the mixture was washed with chloroform. The aqueous layer was acidified with concentrated hydrochloric acid and extracted with chloroform. The extract was dried over anhydrous sodium sulfate. The solvent was distilled off to obtain 15.9 g of the desired product. Melting point: 98 - 103°C

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(3) n-Propyl 3-bromo-2-methyl-6-methylthiobenzoate

Thionyl chloride was added to 15.8 g of 3-bromo-2-methyl-6-methylthiobenzoic acid, and the mixture was refluxed for 4 hours under heating. Thionyl chloride was distilled off, and 70 ml of n-propanol was added to the residue under cooling with ice. Then, a solution comprising 7.3 g of pyridine and 20 ml of n-propanol was dropwise added thereto. The mixture was stirred at room temperature overnight and then concentrated under reduced pressure. Then, ethyl acetate was added thereto, and the mixture was washed sequentially with a 5% sodium carbonate aqueous solution, 10% hydrochloric acid and water and then dried over anhydrous sodium sulfate. Then, the solvent was distilled off under reduced pressure to obtain 18 g of the desired product as a crude product. The crude product was purified by silica gel column chromatography (eluted with benzene) to obtain 16.6 g of a purified product as an oily substance.

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(4) 3-Bromo-2-methyl-6-methylthiobenzoic acid

This product was prepared in the same manner as in Reference Example 2(5). Melting point: 138 - 142°C

(5) 3-Bromo-6-methanesulfonyl-2-methylbenzoic acid

This compound was prepared in the same manner as in Reference Example 2(6). Melting point: 142 - 146°C

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REFERENCE EXAMPLE 9

Preparation of 2-chloro-3-isopropoxycarbonyl-4-methanesulfonylbenzoic acid

This compound was prepared from the compound of Reference Example 6(4) in the same manner as in Reference Example 8(2)-(5). Melting point: 146 - 148°C

The physical properties of the intermediates were as follows:

(1) 2-Chloro-3-iodo-6-methylthiobenzoic acid: Melting point: 155 - 159°C

- (2) Isopropyl 2-chloro-3-iodo-6-methylthiobenzoate: Oily substance
- (3) 2-Chloro-3-isopropoxycarbonyl-4-methylthiobenzoic acid: Melting point: 114 118°C

5 REFERENCE EXAMPLE 10

<u>Preparation of 3-(1-methoxyethyl)-2-methyl-4-methylthiobenzoic acid and 4-methanesulfonyl-3-(1-methoxyethyl)-2-methylbenzoic acid</u>

o (1) 2'-Methyl-3'-nitroacetophenone

To 5.4 g of metal magnesium, 5 ml of absolute ethanol and 0.5 ml of carbon tetrachloride were dropwise added under a dry nitrogen stream. Further, 130 ml of dried diethyl ether was added under refluxing, and then a solution comprising 25 ml of a diethyl ether, 35.2 g of diethyl malonate and 20 ml of ethanol was dropwise added at a rate to maintain the refluxing. After completion of the dropwise addition, refluxing was continued for 3 hours to prepare diethyl ethoxymagnesiomalonate. To the solution of diethyl ethoxymagnesiomalonate thus obtained, 150 ml of a diethyl ether solution of 40.0 g of 2-methyl-3nitrobenzoic acid chloride prepared from 2-methyl-3-nitrobenzoic acid and thionyl chloride, was dropwise added over a period of 20 minutes under refluxing, and the reaction was continued for 2 hours. After cooling, dilute sulfuric acid was added thereto for hydrolysis. The diethyl ether layer was washed sequentially with water and a saturated sodium chloride aqueous solution. Then, the solvent was distilled off under reduced pressure, and the residue was dried to obtain a crude product of diethyl 2-(2-methyl-3nitrobenzoyl)malonate. To this crude product, a mixture comprising 7.5 ml of concentrated sulfuric acid, 60 ml of acetic acid and 40 ml of water was added, and the mixture was refluxed for 6 hours under heating. Then, the mixture was adjusted to pH 10 with a 20% sodium hydroxide aqueous solution. Precipitated oil component was extracted with chloroform. This chloroform layer was washed sequentially with water and a sodium chloride aqueous solution. Then, the solvent was distilled off under reduced pressure to obtain 34.0 g of the desired product. (Yield: 95%) Melting point: 53.0 - 54.0°C

(2) Preparation of 1-methyl-2'-methyl-3'-nitrobenzyl alcohol

To 50 ml of a methanol solution of 0.5 g of sodium hydroxide, 0.9 g of sodium borohydride was added at 0°C, and then 100 ml of a methanol solution of 14.3 g of 2'-methyl-3'-nitroacetophenone was dropwise added thereto. The temperature of the mixture was returned to room temperature and reacted for 1 hour. After the reaction, the reaction mixture was poured into water and extracted with benzene. The subsequent operation was conducted in a usual manner to obtain 14.3 g of the desired product as an oily substance. (Yield: 99%)

Subsequently, the synthesis was conducted in the same manner as in Reference Example 1 to obtain intermediates (3) to (9).

- (3) 1-Methyl-2'-methyl-3'-nitrobenzyl methyl ether: Oily substance
- (4) 1-Methyl-3'-amino-2'-methylbenzyl methyl ether: Oily substance
- (5) 1-Methyl-3'-amino-2'-methyl-6'-thiocyanobenzyl methyl ether: Solid
- (6) 1-Methyl-3'-amino-2'-methyl-6'-methylthiobenzyl methyl ether: Oily substance
- (7) 1-Methyl-3'-iodo-2'-methyl-6'-methylthiobenzyl: Oily substance
- (8) 3-(1-Methoxyethyl)-2-methyl-4-methylthiobenzoic acid: Oily substance
- (9) 4-Methanesulfonyl-3-(1-methoxyethyl)-2-methylbenzoic acid: Melting point: 106 109°C

50 REFERENCE EXAMPLE 11

Preparation of 2,4-dichloro-3-methoxycarbonylbenzoic acid

(1) 2,4-dichloro-3-nitrobenzoic acid

To a solution of 25 ml of fuming nitric acid and 20 ml of sulfuric acid, 25 g of 2,4-dichlorobenzoic acid was gradually added. After completion of the heat generation, the reaction mixture was poured into ice water. Precipitated solid was washed with wat r and dried to obtain 23.0 g of the desired product.

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(2) Methyl 2,4-dichloro-3-nitrobenzoate

23.0 g of 2,4-dichloro-3-nitrobenzoic acid and 150 ml of thionyl chloride were refluxed for 6 hours under heating. Then, thionyl chloride was distilled off to obtain crude 2,4-dichloro-3-nitrobenzoyl chloride. 200 ml of methanol was added to the crude compound and refluxed under heating. Methanol was distilled off, and then ethyl acetate was added thereto to obtain an ethyl acetate solution. The solution was washed sequentially with a 5% sodium hydroxide aqueous solution, diluted hydrochloric acid and water. After drying, the solvent was distilled off to obtain 21.8 g of the desired product. Melting point: 72-74°C.

Subsequently, the synthesis was conducted in the same manner as in Reference Example 1 to obtain intermediates (3) and (4), and the desired product (5).

- (3) Methyl 3-amino-2,4-dichlorobenzoate: Oily substance
- (4) Methyl 2,4-dichloro-3-iodobenzoate: Oily substance
- (5) 2,4-dichloro-3-methoxycarbonylbenzoic acid: Melting point: 183-185°C

REFERENCE EXAMPLE 12

Preparation of 2-chloro-3-cyanomethyl-4-methanesulfonyl benzoic acid

20 (1) Methyl 2-chloro-3-cyanomethyl-4-methanesulfonylbenzoate

5.0 g of methyl 3-bromomethyl-2-chloro-4-methanesulfonylbenzoate was added to a solution of 0.4 g of 18-crown-6 and 1.9 g of potassium cyanide in 50 ml of acetonitrile. The mixture was stirred for 72 hours at room temperature. After filtering off the solid, water was added to the filtrate, and the mixture was extracted with chloroform. After washing the extract with water and drying it, the solvent was distilled off to obtain a crude product. The crude product was purified by short silica gel column chlomatography (eluent: chloroform) to obtain 4.1 g of the desired product. Melting point: 151-155°C.

30 (2) 2-chloro-3-cyanomethyl-4-methanesulfonylbenzoic acid

To 4.0 g of methyl 2-chloro-3-cyanomethyl-4-methanesulfonylbenzoate and 50 ml of methanol, 5 ml of an aqueous solution containing 0.72 g of sodium hydroxide (93%) was gradually added. The mixture was stirred for 15 minutes at room temperature. Then, the reaction mixture was neutralized with diluted hydrochloric acid, methanol was distilled off under reduced pressure and the concentrated solution was extracted with chloroform. After washing the extract with water and drying it, chloroform was distilled off to obtain 0.9 g of the desired product. Melting point: 169-172°C

40 REFERENCE EXAMPLE 13

Preparation of 3-acetoxymethyl-2-chloro-4-methanesulfonyl benzoic acid

(1) Methyl 3-acetoxymethyl-2-chloro-4-methanesulfonylbenzoate

50 ml of a DMF solution containing 5.0 g of methyl 3-bromomethyl-2-chloro-4-methanesulfonylbenzoate and 1.2 g of sodium acetate, was stirred for 2 hours at 100°C. After cooling, the reaction mixture was poured into ice water and extracted with chloroform. After washing the extract with water and drying it, the solvent was distilled off to obtain 4.2 g of the desired product. Melting point: 165-168°C

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(2) 2-chloro-3-hydroxymethyl-4-methanesulfonylbenzoic acid

6 ml of an aqueous solution containing 1.3 g of sodium hydroxide (93%), was added to 3.9 g of methyl 3-acetoxymethyl-2-chloro-4-methanesulfonylbenzoate and 100 ml of methanol. The mixture was stirred for 30 minutes at room temperature. 50 ml of water was added thereto, and methanol was distilled off under reduced pressure. Then, the reaction mixture was acidified with hydrochloric acid and extracted with chloroform. The extract was concentrated to dryness to obtain 1.3 g of the desired product. Melting point: 240-245°C.

(3) 3-acetoxymethyl-2-chloro-4-methanesulfonylbenzoic acid

1.3 g of 2-chloro-3-hydroxymethyl-4-methanesulfonyl benzoic acid and 30 ml of acetic anhydride, was refluxed for 3 hours under heating. The reaction mixture was concentrated under reduced pressure. Then, 50 ml of water was added thereto and warmed for 1 hour. Precipitated solid was collected by filtration, washed with water and dried to obtain 1.35 g of the desired product. Melting point: 219-223°C.

REFERENCE EXAMPLE 14

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Preparation of 2,4-dichloro-3-methoxymethylbenzoic acid

This compound was prepared in the same manner as in Reference Examples 3(1) and 4. Melting point: 130-136°C.

The physical properties of the intermediates were as follows:

- (1) Methyl 3-bromomethyl-2,4-dichlorobenzoate: Melting point: 55-58°C
- (2) Methyl 2,4-dichloro-3-methoxymethylbenzoate: Oily substance

The physical properties of benzoic acids prepared in accordance with the preceding Reference Examples will be given in Tables 1 and 2 including those of the preceding Reference Examples.

Table 1

X	Y
ноос	-z

10	Χ.	Y	Z	Melting point (°C)
	Йe	CH ₂ OMe	SMe	192~194
15	Ме	CH ₂ 0Me	S0 ₂ Me	129~131
	Ие	CO ₂ Me	SMe	178~178.5
20	Ме	CO ₂ Me	SOzMe	151~152
	Иe	CH z OE t	SMe	172~175
25	Me	CH z OE t	SOzMe	160~162
	C L	CO _z Me	C L	183~185
	Иe	CHMeOMe	Sile	Oily substance
30	Иe	CHMe0Me	S0 _z Me	106~109
	Ие	CO _z Pr-i	SMe	151~153
35	Ме	CO ₂ Pr-i	SOzMe	153~155
	C L	CH ₂ OMe	S0 z Me	137~141
	Ме	CH z O Pr - i	SNe	134~138
40	Me	CH ₂ OPr-i	S0 zMe	159~161

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Table 1 (continued)

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	X	Y	Z	Melting point (°C)
o	Ме	CO _z CH _z CH _z OMe	SMe	90~93
	Ме	CO ₂ CH ₂ CH ₂ OMe	S0 ₂ Me	118~121
i	CA	CH ₂ SEt	S0 ₂ Me	172~174
	Ме	COzEt	SMe	114~120
	Ме	COzEt	S0 z Me	119.7~127.9
	C A	CH ₂ OCH ₂ CH ₂ OMe	S0 ₂ Me	93 ~ 95
	C &	CH ₂ N	S0 ₂ Me	Oily substance
	Нe	CO z	SMe	169~172
	Ме	CO z	S0 ₂ Ne	129~134
	Ме	CO _z Pr-n	SMe	138~142
	Иe	CO ₂ Pr-n	S0 _z Ne	142~146
	C L	CH ₂ OH	SO _z Me	240~245
	c e	C0₂He	SMe -	176~179
	C L	C0 _z Me	S0 ₂ Me	160~162
	C L	CO _z Pr-i	SMe	114~118

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Table 1 (continued)

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	Х	Y	Z	Melting point (°C)
10	C L	CO ₂ Pr-i	S0 ₂ Me	146~148
	0Me	COzMe	Sile	107~109
15	0 Me	C0 _z Me	S0 ₂ Me	113~119
	Ме	CHE tOMe	SMe	Oily substance
20	Me	CHEtOMe	SOzMe	Oily substance
	Me	CHMeOEt	SMe	Oily substance
	Me	CHMeOEt	S0 _z Me	Oily substance
25	C <i>L</i>	$CH_2OCH_2C \equiv CH$	SOzMe	166~169
	C &	CH 2 OCH 2 CH = CH 2	SOzMe	118~119
30	C L	CH ₂ OAm-n	S0 ₂ Me	Oily substance

SMe

SOzMe

SOzMe

SOzMe

SMe

SMe

98~105

107~113

155 ~157

157~161

138~144

Oily substance

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40 -

Мe

Мe

C &

0Me

0Me

Мe

CO₂Am-i

 CO_2Am-i

CHzOMe

CH 20Me

CH2OCH2CF3

CO₂CH₂CH₂C &

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Table 1 (continued)

	X	. Ү	Z	Melting point (°C)
o	Ие	CO ₂ CH ₂ CH ₂ C L	S0 _z Me	121~126
	C L	CH ₂ CN	SOzMe	169 ~172
5	C L	CH ₂ OAc	SOzMe	219 ~223
	C &	CH ₂ OMe	C &	130~136
_	C L	COzEt	SOzMe	156 ~159
0	C L	CH=CHOMe (trans)	SOzMe	146 ~149
5	· C & ·	CON(Et) _z	SOzMe	196 ~201

Table 2

			•
<u> </u>	Y	Z .	'H-NMR (δ, ppm) [Solvent]
Ме	CHEtOMe	SOzMe	1.19(3H,t), 1.63(3H,d),
	•		2.78(3H,s), 3.18(3H,s),
			3.35(2H,q), 5.63(1H,q),
			7.81(2H, A-B q), 10.20(1H,s)
		-	[CDC & z]
Ме	CHMeOEt	SMe	1.00(3H,t), 1.67~2.26(2H,m),
			2.46(3H,s), 2.69(3H,s),
			3.21(3H,s), 4.91(1H,d-d)
		•	7.48(2H, A-Bq), 10.2(1H,s)
	•		[CDC 2 3]
Ме	CHMeOEt	S0 _z Me	1.04(3H,t), 1.60~2.20(2H,m).
. *			2.66(3H,s), 3.23(6H,s),
			5.26(1H,d-d), 7.79(2H, A-B q)
			9.0(1H, Broad s)
			[CDC & 3 + DMSO-d4]
0Me	CH₂0Me	SOzMe	3.04(3H,s), 3.24(3H,s),
	•		3.71(3H,s), 4.71(2H,s),
			7.71(2H,s), 8.88(1H,Broad s)
			[CDC & s + DMSO-d.]

These benzoic acids can readily be led to benzoyl chlorides by chlorinating agents such as phosphorus pentachloride, thionyl chloride and sulfuryl chloride.

By using such benzoic acids or benzoyl chlorides, compounds of the present invention can be readily prepared in accordance with reaction schemes (1) to (4).

The present invention will be described in further detail with reference to Examples. However, it should be understood that the present invention is by no means restricted to such specific Examples.

O EXAMPLE 1

<u>Preparation of 1-ethyl-5-hydroxy-4-(4-methanesulfonyl-3-methoxymethyl-2-methylbenzoyl)pyrazole</u>

1.12 g (0.01 mol) of 1-ethyl-5-hydroxypyrazole is dissolved in 30 ml of t-amyl alcohol, and then 2.59 g (0.01 mol) of 4-methanesulfonyl-3-methoxymethyl-2-methylbenzoic acid, 2.06 g (0.01 mol) of N,N'-dicyclohexylcarbodiimide and 0.69 g (0.005 mol) of anhydrous potassium carbonate were sequentially added thereto. The mixture was reacted at a temperature of from 80 to 90°C for 8 hours under stirring. After completion of the reaction, t-amyl alcohol was distilled off under reduced pressure, and 30 ml of water was added to the residue to dissolve the soluble components. The mixture was subjected to filtration to separate out the insolubles. The aqueous solution thus obtained was washed with chloroform, and concentrated hydrochloric acid was added to adjust pH<1. The precipitated oil component was extracted with chloroform. The solvent was distilled off under reduced pressure, and the residue was purified with silica gel column chromatography (eluent: ethyl acetate/ethanol = 9/1) to obtain 2.3 g of the desired product. (Yield: 66%, melting point: 116 - 118°C)

EXAMPLE 2

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Pr paration of 1-ethyl-5-hydroxy-4-(4-methanesulfonyl-3-methoxycarbonyl-2-methylbenzoyl)pyrazole

1.12 g (0.01 mol) of 1-ethyl-5-hydroxypyrazole was dissolved in 30 ml of t-amyl alcohol, and 2.72 g (0.01 mol) of 4-methanesulfonyl-3-methoxycarbonyl-2-methylbenzoic acid, 2.27 g (0.011 mol) of N,N'-dicyclohexylcarbodiimide and 0.76 g (0.0055 mol) of anhydrous potassium carbonate were sequentially added thereto. The mixture was reacted at 80°C for 6 hours under stirring. After completion of the reaction, t-amyl alcohol was distilled off under reduced pressure, and then water was added to the residue to dissolve the soluble component. The mixture was subjected to filtration to separate out the insolubles. The aqueous solution thus obtained was washed twice with chloroform, and then concentrated hydrochloric acid was added to adjust pH<1. The precipitated oil component was extracted with chloroform. The chloroform layer was washed sequentially with water and a saturated sodium chloride aqueous solution and then dried over anhydrous sodium sulfate. Then, the solvent was distilled off under reduced pressure, and the residue thus obtained was recrystallized from water/ethanol to obtain 2.26 g of the desired product. (Yield: 62%, melting point: 150 - 152°C)

45 EXAMPLE 3

Preparation of 5-hydroxy-(3-isopropoxycarbonyl-4-methanesulfonyl-2-methylbenzoyl)-1-methylpyrazole

The operation and treatment were conducted in the same manner as in Example 1 except that 1.12 g of 1-ethyl-5-hydroxypyrazole was changed to 0.98 g of 5-hydroxy-1-methylpyrazole, and 2.72 g of 4-m thanesulfonyl-3-methoxycarbonyl-2-methylbenzoic acid was changed to 3.00 g of 3-isopropoxycarbonyl-4-methanesulfonyl-2-methylbenzoic acid, to obtain 1.71 g of the desired product. (Yield: 45%, melting point: 192 - 194°C)

EXAMPLE 4

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Preparation of 4-(2-chloro-3-ethylthiomethyl-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole

3 g of 2-chloro-3-ethylthiomethyl-4-methanesulfonylbenzoic acid, 0.72 g of potassium carbonate, 50 ml of t-amyl alcohol, 1.95 g of N,N'-dicyclohexylcarbodiimide and 4.5 g of a 25% t-amyl alcohol solution of 1-ethyl-5-pyrazolone were mixed and heated under stirring for 4 hours at a temperature of from 70 to 80°C. After cooling, the mixture was distilled under reduced pressure, and 200 ml of water was added to the residue. After filtering off the insolubles, the filtrate was washed with chloroform. Hydrochloric acid was added to the aqueous layer, and the mixture was extracted with chloroform. The extract was dried, and the solvent was distilled off to obtain the desired product as a crude product. The crude product was recrystallized from ethanol to obtain 1.88 g of the purified product. (Melting pont: 142 - 145°C)

. EXAMPLE 5

Preparation of 4-(2-chloro-5-ethanesulfonylmethyl-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole

0.5 g of the compound obtained in Example 4 was dissolved in a solution comprising 30 ml of CHCl₃ and 30 ml of THF at room temperature, and 2.2 equivalent of m-chloroperbenzoic acid was added thereto under cooling in ice bath. The mixture was gradually returned to room temperature and stirred for 1 day. The solvent was distilled off, and crystals thus obtained were collected by filtration and washed with ethyl ether to obtain 2.2 g of the desired product. (Melting poing: 133 - 135°C)

EXAMPLE 6

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Preparation of 4-(2-chloro-3-ethanesulfinyl-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole

0.45 g of the compound obtained in Example 4 was dissolved in 30 ml of dioxane, and 0.21 g of sodium bromite trihydrate was added thereto. The mixture was stirred at room temperature for 30 minutes, and then water was added thereto. The mixture was extracted with chloroform. The extract was dried, and the solvent was distilled off to obtain a crude product. The crude product was purified by column chromatography (eluted with chloroform/ethanol) to obtain 0.2 g of the desired product as an oily substance.

35 EXAMPLE 7

Preparation of 4-(2,4-dichloro-3-methoxycarbonylbenzoyl)-1-ethyl-5-hydroxypyrazole

This compound was prepared in the same manner as in Example 2. Melting point: 167-170°C.

EXAMPLE 8

Preparation of 5-benzyloxy-4-(2,4-dichloro-3-methoxycarbonylbenzoyl)-1-ethylpyrazole

A solution prepared by dissoving 0.3 g of the compound prepared in Example 7 and 0.1 g of triethylamine in 13 ml of benzene, was stirred at room temperature for 30 minutes, and then at 50°C for 3 hours. Insoluble substances were filtered off, and then the filtrate was concentrated under reduced pressure. The concentrated product was purified by silica gel column chromatography (eluent: benzene/ethyl acetate) to obtain 0.15 g of the desired product as an oily substance.

EXAMPLE 9

Preparation of 5-hydroxy-4-(4-methanesulfonyl-3-methoxymethyl-2-methylbenzoyl)-3-methoxymethyl-1-methylpyrazole

(1) 5-(4-methanesulfonyl-3-methoxymethyl-2-methylbenzoyl)oxy-3-methoxymethyl-1-methylpyrazole

1.9 g of 5-hydroxy-3-methoxymethylpyrazol was added to a mixture consisting of 8 ml of an aqueous solution containing 0.5 g of potassium hydroxide (85%) and 12 ml of chloroform, and then 4-methanesulfonyl-3-methoxymethyl-2-methylbenzoyl chloride was added thereto. The mixture was stirred for 3 hours at room temperature. Then, the reaction mixture was extracted with chloroform. The chloroform solution was washed with water and dried to obtain the desired product substantially quantitatively as an oily substance.

(2) 5-hydroxy-4-(4-methanesulfonyi-3-methoxymethyl-2-methylbenzoyi)-3-methoxymethyl-1-methylpyrazole

3.0 g of the compound obtained in step (1), 2.7 g of potassium carbonate and 8 ml of dioxane, were stirred at 120°C for 3.5 hours. 20 ml of water was added thereto and then the mixture was left to cool. The reaction solution was washed with chloroform and acidified with hydrochloric acid. The reaction solution was extracted with chloroform, washed with water and dried to obtain 1.8 g of a crude product. The crude product was recrystallized from ethanol to obtain 1.2 g of the desired product. Melting point: 100-104°C.

EXAMPLE 10

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Preparation of 4-(3-acetoxymethyl-2-chioro-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole

This compound was prepared in the same manner as in Example 2. Melting point: 140-144°C

EXAMPLE 11

Preparation of 4-(2-chioro-3-hydroxymethyl-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole

To 30 ml of a methanol solution containing 0.3 g of the compound prepared in Example 10, 5 ml of an aqueous solution containing 0.1 g of sodium hydroxide (93%) was added, and the mixture was stirred for 2 hours at room temperature. Methanol was distilled off under reduced pressure. Then, hydrochloric acid was added to the residue. The precipitated product was collected by filtration to obtain 0.2 g of the desired product. Melting point: 70-76°C.

The physical properties of the compounds prepared in the same manner as the preceding Examples will be given in Tables 3 and 4 including those of the preceding Examples.

5					Melting point (°C)	Oily substance	Oily substance	116~118	Oily substance	274~274.5	$199 \sim 201$	150~152	
		- 50 z Ne	•	•	G E	=	CII 2 Ph	55	=				
15					7	S02Me	SOzMe	SOzMe	SOzMe	SOzMe	SOz Me	SO2Ne	
20 25	Table 3	X J	00	. A	٨	CII 2 OMe	CII 2 O Me	CII 2 OMe	CII 2 OMe	C0211	CO z Me	CO ₂ Ke	
		es	. –	-	×	æ	Ме	M e	Ме	Ж	Ме	Ме	
30			•		В	=	=	==	=	=	=	=	
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8 Ие II Ие COzBt SOzИе 1 0 Ие II Ие COzPr-I SOzИе 1 0 Ие II Ие COzPr-I SOzИе 1 1 Вt II Ие COzPr-I SOzИе 1 2 Ие II Ие CZ CZ 1 3 Ие II Ие CZ CZ 1 4 Ие II Ие CIIzOBt SOzИе 1 6 I-Pr II Ие CIIzOBt SOzИе 1 7 Ие Ие Ие CIIzOBt SOzИе 1 8 Ие Ие СПию SOzИе 1 8 Ие Ие CIIIно SOzИе	
Bt II Ne CO.2Pr-1 Ne II Ne CO.2Pr-1 Ne II Ne CO.2Pr-1 Ne II Ne CO.2Ne Ne II Ne CII.0Bt Bt II Ne CII.0Bt II-Pr II Ne CII.20Bt Ne II Ne CII.20Bt Ne II Ne CIII.0Bt Ne II Ne CIII.0Bt	SOzMe II -1 SOzMe II -1 SOzMe II C & II C & II C & II t SOzMe II
Me II Me CO2Pr-1 Bt II Me CO2Pr-1 Me II C2 CO2Me Me II C2 CO2Me Me II Me CII2OBt II Me CII2OBt II Me CII2OBt II Me CII2OBt Me Me CII2OBt Me II Me CII2OBt	-1 SO ₂ Me II C L II C L II C L II C L II L C L II L C L II L SO ₂ Me II
Bt II Ne CO2Pr-I Ne II C & CO2Ne Ne II Ne CII2OBt Bt II Ne CII2OBt II-Pr II Ne CII2OBt Ne Ne CII2OBt Ne II Ne CII2OBt Ne II Ne CII2OBt Ne II Ne CIIAONe	-1 SO ₂ Me II C & II C & p-Ts t SO ₂ Me II
Ме II С. С. СО. Ме Ме II Ме СП. ОВ t В t II Ме СП. ОВ t I - Pr II Ме СП. ОВ t I - Pr II Ме СП. ОВ t II Ме СП. ОВ t II Ме СП. ОВ t	C. R. H. C. R. P. Ts
He II C. C. CO. He He II Me CII.OBt IPr II He CII.OBt He He Me CII.OBt	C & p-Ts t S0zMe II
He II Me CII.OBt iPr II Me CII.OBt Me Me CII.OBt	SOz Me
Bt II Me CIIzOBt i-Pr II Me CIIzOBt Me Me CIIzOBt	
i-Pr II Me CII.0Et Me Me Me CII.0Et Me II Me CIIMeOMe	
Ne Ne Me CIIzOEt Ne II Ne CIINeoMe	
Me II Me CIINeoMe	
	CIIMBONB SO. MB II $238\sim240$
1 9 Bt II Me CIINeome Sozme	
2 0 Me II C. L. CII.OMe SO.Me	CII 2 OMe

		Melting point(°C)	151 ~ 154	142 ~144	$125\!\sim\!127$	114~117	$122 \sim 124$	$157 \sim 161$	$142\!\sim\!145$	Oily substance	133~135	Oily substance	
		g	=	=	=	=	=	=	=	=	=	=	
•		Z	SO. Me	SOzMe	SOz Me	SOzNe	SozMe	SOzMe	SO z Ne	SO 2 Me	SO ₂ Me	SO Me	÷
Table 3 (continued)		Ą	CII 20Ne	CII 2 0 Ne	CII 2 0 P r - 1	CO2CII2CII2ONB	CO2CH2CH2ONe	CII 2 OCII 2 CII 2 ONe	CII s S B t	CII 2 SOB t	CH 2 SO 2 B t	COrpr-n	
Tabl		×	C &	C	He H	¥e	#0	C L	C B	C L	C L	Me .	
		В	_		=	=	=	=	=	=	=	=	
	,	A	टा **	I-Pr	H +	Me	원 +	Ме	Rt	R t	3 1	## ##	
		Compound No.	2 1	2 2	2	2 4	2 5	5 6	2 7	2 8	5 9	3 0	

5		Melting point (°C)	Oily substance	$220\sim222$	$179 \sim 183$	$183 \sim 185$	174~176	$138 \sim 140$	161 ~164	Oily substance	$180 \sim 190$	$210 \sim 216$	Pr-i 95~102	$195 \sim 198$
10		8	=	=	=	=	==	=	==	=	×	Na	N T I	=
15		7	SO # He	SO. He	SO _z Me	SO. He	SO. Me	SO. Me	SOz Ne	SO. Ne	SO. He	SO. No	SO ₂ He	S0. He
20	Table 3 (continued)	\ \		\bigcirc	\bigcirc	9	CO.Me	Же		ClizOAm-n	Же	Me	Me	Ие
25	ble 3 (c		CH Z.N.	C 0 2 ×	× 200	COz He	00	C02M8	CHI	CII 2 O	CII 2 O Me	CII 2 O Me	CII 2 O Me	CO2Ne
30	Ta	×	7 9	Ж	¥.	CR	C &	C &	C &	C L	Me	H e	. Me	ОМе
	_	В	=	=	=	=	=	=	=	=	=	=	=	=
35	•	A	Ж	© X	#1 #1	œ	8 +	Pr-1	R t	₩ e	3 1	3	#	Ж
40		Compound No.	es —	3 2	8	ಕು ಕ	3	3 6	3 7	3 8	3	4 0	4 1	4 2

5			Melting point (°C)	117~119	$141 \sim 143$	$167 \sim 170$	$232\!\sim\!242$	116~121	$154 \sim 157$	$149 \sim 152$	172~175	167~170	Oily substance	144~151
10			Q Me	11	=	=	1/2 Ca	=	=	==	=	=	CM2-Ph	=
15			Z	SOz Me	SO2Me	SOzMe	SOzMe	SO ₂ Ne	SOZNe	SOzMe	SO 2 He	0.2	C L	C B
20 25		Table 3 (continued)	Y	C02Pr-1	. C0 2 Pr - i	CH & OCH & CP 3	CII 20 No	CO.Me	CII 2 O Me	C02C112C112C &	CO 2 Me	CO.Me	CO 2 Me	со 2 Ма
30		Tal	В х	7 J	9 0 I	g o	Me	He	0 Me	Me	. OMe	7 0 1	7 O 1	7 O
35	ť		A	W e	E +	Ne II	n t	pr-i	Me	B t .	1 2	E t	B t	
40			Compound No.	4 3	4 4	4 5	4 6	4 7	4 8	4 9	5 0	5 1	5 2	5

10		Melting point (°C)	104~110	$100 \sim 104$	$235\!\sim\!239$	140~144	$10\sim16$	$142 \sim 146$	$102 \sim 104$	$100 \sim 104$	Oily substance	141~144	165~171	123~126	Oily substance	Oily substance	Oily substance	$94 \sim 97$
15		Q Mel	CH r - Ph	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=
20		7	C &	SO # Hie	SO.Me	SO2Me	SO. Ma	SMe	7 0	SO, No	SMe	C L	502Ne	SO. He	SO. He	SOz Ne	SO. He	SO. Me
25	Table 3 (continued)	٨	CO.Ne	CII z O Me	CII . CN	CII s O A c	CII 2 0 II	CO.He	CII , O Me	CO . B t	CII 20He	CII 2 0 Me	CII=CIIONe (trans)	1820j	CII 2 OMe	CIINe OB t	CHEtoMe	CON (Bt) :
30	Table	×	C L	æ	. <i>a</i> 3	C P	C &	He	c e	C &	× 0	C A	C E	g 3	0Me	M e	æ e	C &
35		A B	Pr-1	Ne CII:0Ne	et .	# # # # # # # # # # # # # # # # # # #	= =	: : : : : : : : : : : : : : : : : : :	E t	et n	Et 11	Ne m	Et II	Pr-i II	Bt II	Bt H	Bt H	Bt ==
40		punod	5 4	5 5	5 6	5 7	5 8	5 0	0 9	6 1	6 2	6 3	6 4	6 5	9 9	1 9	. 89	6 9

The compounds represented by the Compound Nos. in the following Table are the same as represented by the corresponding Compound Nos. in Table 3.

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Table 4

5	Compound No.	¹ H-NMR (δ, ppm) [Solvent]
	1	2.47(3H,s), 3.22(3H,s), 3.50 (3H,s),
		3.69(3H,s), 4.96(2H,s), 7.30(1H,s),
10		7.78(2H, A-Bq), 10.9(1H) [CDC L 3]
15	2	2.41(3H.s), 3.17(3H.s), 3.50 (3H.s),
		4.94(2H,s), 5.53(2H,s), 7.30~8.12
		(8H, m) (CDC L z)
20	3	1.44(3H,t), 2.48(3H,s), 3.23 (3H,s),
		3.51(3H,s), 4.07(2H,q), 4.98(2H,s),
25		7.36(1H.s), 7.82(2H,A-Bq) (CDC L 3)
30	4	1.48(6H,d), 2.47(3H,s), 3.19 (3H,s),
30		3.48(3H,s), $4.53(1H,m)$, $4.92(2H,s)$,
	•	7.18(1H,s), 7.69(2H,A-Bq), 9.57(1H)
35		[CDC L 3]
		•

Table 4 (continued)

5	Compound No.	'H-NMR (δ, ppm) [Solvent]
	13	2.43(3H,s), 3.78(3H,s), 3.94 (3H,s),
10		7.24 \sim 7.81(7H, m) (CDC ℓ_3)
	15	1.07(3H,t), 2.27(3H,s), 3.01 (3H,s),
15		$3.30 \sim 3.65(5H,m), 4.77(2H,s),$
		6.99(1H,s), 7.48(2H, A-B q),
20		8.22(1H,s) (CDC 2 3)
	•	
25	28	1.45(3H,t), 3.04(2H,q), 4.05 (2H,q),
		4.91(2H,q), 7.29(1H,s), 7.70 (1H,s),
30		7.85(2H,q) (CDC L ₃)
	30	0.91~2.03(8H,m), 2.41(3H,s),
35	•	$3.20(3H,s)$, $3.91 \sim 4.47(4H,m)$,
		7.36 \sim 8.08(4H, m), (CDC ℓ_{3})
40		1 00/07 1) 1 40/07 1) 0 40 (07 1)
	16	1.26(3H,t), 1.49(3H,d), 2.49 (3H,s),
45		3.24(3H,s), 3.69(2H,q), 4.59 (1H,m),
~ ∪		5.00(2H,s), $7.28 \sim 8.14(4H,m)$,
	·	(CDC L 3)

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Table 4 (continued)

5		•
	Compound No.	'H-NMR (δ, ppm) [Solvent]
10	17	1.27(3H,t), 1.67(3H,s), 2.42 (3H,s),
		3.23(3H,s), 3.63(3H,s), 3.68 (2H,q),
		5.02(2H,s), 7.7 (1H,s),
15 .		7.75 (2H, A-B q) (CDC L 3)
		•
20	62	1.45(3H,t), 2.49(6H,Broad s),
		3.44(3H,s), 4.03(2H,q), 4.66 (2H,s),
		7.29(2H,q), 7.39(1H,s),
25	6 6	1.47(3H,t), 3.29(3H, s), 3.51(3H,s)
	-	3.82(3H,s), 4.09(2H,q), 5.00 (2H,s),
30		7.50(1H,s), 7.84(2H,A-Bq), 7.96(1H,s)
		(CDC l 3)
35	67	1.07-1.67 (9H, m), 2.59(3H,s)
		3.17(3H,s), 3.42(2H,t), 3.96 (2H,t),
		5.61(1H,q), 7.27(1H,s), 7.61(2H,A-Bq)
40		9.66 (1H, Broad s) [CDC L 3]
45	68	· 1.09(3H, t), 1.45(3H, t), 2.55(3H, s)
		3.16(3H,s), 3.27(3H,s),
		3.70-4.20(4H,m), 5.13-5.36(1H,m),
5 0		7.14(1H,s), 7.60(2H, A-Bq),
		9.46(1H, Broad s) (CDC & 3)
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Compounds which can be prepared in the same manner as the preceding Examples will be given in Table 5 including those of the preceding Examples. However, the present invention is not restricted to such compounds.

Various symbols used in Table 5 has the following meanings.

$$Y11: -N = H$$

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Table 5

	A	В	X	Y	Z	Q:
20	Йe	H	Cl	COOMe	MeS	H
	Me	H	C1	C00Me	MeS0	H
	Иe	H	C1	C00Me	lls	H H H Q1
	Иe	H	CI	COOMe	Ms	Q1
25	Иe	H	Cl	C00Me	Ms	Q2
	Йe	H	CI	C00Me	Ms	Q3
	Me	H	C1	C00Me	Ms	Q 4
	Ме	H H H H H	C1	C00Me	Ms	95
30	Ме	H	CI	COOMe	Ms	96
	Me	H ·	ÇI	COOMe	Ms	<u>u</u> 20
	Me	Me	CI	COOMe	Ms	Ħ
	Me	C1	C1	COOMe	Ms	<u>H</u>
	Me	CF ₃	CI	C00Me	ns '	. Ц
35	Ме	0Me	C1	COOMe) is	H
	Ме	SMe	CI	COOMe	Ms V-C	n
	_Me Me	H H	CI CI	COOEt	MeS	a. T
	ne Ne	H H	CI CI	COOEt COOEt	MeSO Ms	H H H H H O1
40	Иe	H	CI	COOEt	ns Ms	ก้า
	lle	T	CI	COOEt	ns Vis	<u> </u>
	Иe	H H	CI	COOEt	Ms	Q 13
	Иe	Ħ	CI	COOEt	Ns	Q4
	Мe	Ħ	CI	COOEt	Ms	95
45	Мe	Ä	CI	COOEt	ls	96
	lle	Ĥ	ĊĨ	COOEt	Ms	922
	Мe	Йe	CI	COOEt	ris .	H.
	Иe	Cl	CI	COOEt	Ms	н .
50						

						-
	<u>A</u>	В	X	Y	Z	ୡ
5	lie	CF ₃	Cl	COOEt	Ms	H
	Me Me	0Ме SMe	CI	COOE ±	Ms	Ħ
	ne Me	H	CI CI	COOEt	its	н н н н ч
10	Мe	Ħ	CI	COOCH (CH ₃) ₂ COOCH (CH ₃) ₂	MeS	Ħ
	Me	H H H	CI	COOCH (CH ₃) ₂	MeSO Ms	Ħ
	Me	H	C1	COOCH (CH ₃) 2	ns Ms	п 07
	Me	H	CI	COOCH (CH ₃) z	Ms	Q12
15	Me Me	n n	C1	COOCH (CH ₃) ₂	Ms	6 9
	Йe	Ħ	Cl Cl	COOCH (CH ₃) ₂ COOCH (CH ₃) ₂	Ms	94
	Мe	H H H H	CI	COOCH (CH ₃) ₂	Ms Ms	95 96
	Мe		C1	COOCH (CH ₃) z	Ms	Q17
20	Me Me	lie Cz	CI	COOCH (CH ₃) _z	Ms	Ħ
	ne Me	CI CF ₃	CI CI	COOCH (CH ₃) _z	Ms	H.
	Мe	0Me	CI	COOCH (CH ₃) ₂ COOCH (CH ₃) ₂	Ms Ms	H
	Me	SMe	CI	COOCH (CH ₃) ₂	ns Ns	H H
25	Ме	H	CI .	COOMe	C1	Ħ
	Me Me	H H	CI CI	COOMe	CI	ŒΙ
	Me	Ħ	CI	COOMe COOMe	CI CI	92
30	Me	Ħ ·	Cl	COOEt	CI	93 H
30	Ме	H	CI	COOEt	ČÎ	ü l ·
	Me Me	H	CI	COOEt	C1	Q2
	Me	H	C1 C1	COOEt COOCH(CH ₃) ₂	C1	g 3
35	Me	H H H H H H	CI	COOCH (CH ₃) ₂	CI CI	QI H
	Me	H	CI	COOCH (CH ₃) ₂	Ci	92
	Me Me	H	C1	COOCH (CH ₃) ₂	CI	93
	Me	H H	CI CI	CON (CH ₃) ₂	MeS	H
40	Me	H	CI	CON (CH ₂) ₂ CON (CH ₃) ₂	MeSO Ms	H
	Иe	H	CI	CON (CH ₃) ₂	Ns	Q 1
	Me	H H H	CI	CON (CH ₃) ₂	Ms	Q18
	Me Me	H II	CI CI	CON (CH ₃) ₂	Ms	Q13
45	Me	Ħ	CI	CON (CH ₃) ₂ CON (CH ₃) ₂	ds Ms	94 95
	Ме	H	CI	CON (CH ₃) ₂	ns Ms	9 6
_	Me	H	CI	CON (CH ₃) ₂	Ms	Q22

	A	В	Χ.	Y	Z	ę.
5	Йe	Me	C1	CON (CT)		
	lie	CI	C1 CI	CON (CH ₃) ₂	Ms	H
	Иe	CF ₃	C1	CON (CH ₃) _z CON (CH ₃) _z	Ms	H H H H
	Ме	OMe	C1		Ms Ma	H
10	Me	SMe	C1	CON (CH ₃) z	Ms	H H
	Иe	H	C1	CON (CH ₃) ₂	Ms	Ħ
	Иe	П.	CI	CON (CH ₃) ₂	CI	Н
	Иe	H H H H H H H H	C1	CON (CH ₃) ₂	C1	Q1
	Me	T L	C1	CON(CH ₃) ₂	C1	Q2
15	Иe	ä II	C1	CON (CH ₃) ₂	C1	93
	Me	П.	CI	C00C4H ₉	. Ns	H H H
	Me	11.		COOCH CT (CT)	C1	Ħ
	Ме	T.	C1	COOCH ₂ CH (CH ₃) ₂	Ms	H
	ne Ne	17	C1	COOCH 2CH (CH ₃) 2	Ç1	H H
20	Me	п. П	Cl . Cl	COOCH (CH ₃) C ₂ H ₃	Ms	H
	Me	. 17	CI	COOC (CH ₂) C ₂ H ₂	C1	· H ·
	Me	H	CI	E (EH2) 2002	Ms	. Н
	Me	H	C1	COOC (CH ₃) ₃	C1	H
25	Иe	H		CONFIME CONFIME	Ms	H H H
	Me	H	CI CI		C1	n n
	Иe	H	Cl	CONHET	Ms	H
	ne Ne	H	CI	CONHET	C1	H
	Иe	H -	C1	CONHCH (CH ₃) ₂	Ms C1	H
30	Йe	H	CI	CONHCH (CH ₃) ₂ CONHC (CH ₃) ₃	C1.	H
	Йe	H	CI	CONHC (CH ₃) ₃	Ms Cl	H H H H
	Йe	Ħ	CI	CONHC (CH3) 3	Ms	<u>п</u>
	Me	Ħ	C1	CONHC ₄ H ₄	CI	п
35	Иe	Ħ	C1	CONHCH ₂ CH (CH ₃) ₂	Ms	п
33	lle	H	CI	CONHCH ₂ CH (CH ₃) ₂	CI	H H H
	Île	Ħ	CI	CONHCH (CH ₃) C ₂ H ₃	Ms	11 17
	Йe	Ħ	CI	CONHCH (CH ₃) C ₂ H ₅	CI	H
	lle lle	Ħ	CI	CONEtz	Ms	H
40	Иe	Ħ	CI	CONE tz	CI	H
	Me	Ħ	CI	רטא (נה(נה-)-) -	Ms	H
	Me		CI	CON (CH(CH ₃) ₂) ₂ CON (CH(CH ₃) ₂) ₂	Cl	
	Йe	Ħ	Ci	VI (OII (OII 3) 2) 2	Ms	Ħ
	Me	Ħ	CI .	ŸŤ	CI	H H H
45	lle	H H H	CI CI CI	v2	Ms	Ħ
	Me	Ä	Ci	v2	CI	H
	Me	H	CI CI	Y1 Y1 Y2 Y2 Y3	Ms	Ħ
•					. ~ .	

5	A	В	Х	Y	Z	Q	
	Ме	H	CI	Y3	CI	H	
	Me	H	CI	COOPh	Ms	Ħ	
	Ме	H	C1	COOPh	CI	H H H H	
10	Me Me	H	C1	COOCH ₂ Ph	Ms	H	
	Me Me	H	CI	COOCH ₂ Ph	C1	H	
	ne Me	H	CI CI	COOCH CH CH	Ms	H	
	Me	H	CI	COOCH ₂ CH=CH ₂ COOCH ₂ C=CH ₂	ÇI	H H	
15	Йe	Ĥ	CI	COOCH ₂ C=CH ₂	Ms Cl	H	
,3	Иe	Ħ	ČĪ	C(0) SMe	Cl Ms	H	
	Me	H H	CI	C (0) SMe	C1	n n	
	Me	Ħ	C1	C(0) SE±	Ms	н.	
	Me	H	CI	C(0)SEt	CI	H H H	
20	Me	H	C1	C(0) SCH (CH ₃) _z	Ms	H	
	Me M-	H	CI	C(0)SCH(CH ₃) _z	C1.	H	
	Me Me	H H H	C1	C(0)SC ₃ H ₇	Ms	H	
	rie Me	п	Cl Cl	C(0) SC ₃ H ₇	ÇI	. H	
25	Me	H	C1	C (S) 0Me C (S) 0Me	Ms C1	H	
	Me ·	Ħ	CI	C(S) OEt	C1 Ms	. Н	
	Me	Ħ	cī	C(S)OEt	C1	H	
	Мe	H	· C1	C(S)OCH(CH ₃) ₂	Ms ,	Ħ	
30	Иe	H H H H H	Cl	C(S)OCH(CH ₃) ₂	C1 .	H	
	Ие	H	C1	C(S) SC ₃ H ₇	Ms	H	
	Me Me	n T	C1 C1	C(S) SC ₃ H ₇	<u>C</u> 1	Ħ	
	Me	Ħ	C1	C(S)SMe C(S)SMe	Ms Cl	H	
35	Me	H H	CI	C(S) SEt	Ms	H H	
	Мe		CI	C(S).SEt	CI	H ·	
	Йe	H H H H	CI	C(S)SCH(CH ₃) ₂	Ms	Ħ	
	Ме	Ħ	C1	C(S)SCH(CH ₃) _z	CI	H	
40	Me Me	H	CI	C(S)SC ₃ H ₇	Ms	H H H	
	ne Me	n H	CI	C(S) SC ₃ H ₇	CI	H	
	Йe	H	Me Me	COOMe COOMe	MeS MeSO	H	
	Мe	Ħ	Иe	COOMe	ileso Ms	H H	
45	Me	H	Me	COOMe	Ms	äı	
	Me	H	Ме	COOMe	Ms	92	
	Me	Ħ	Me	COOMe	Ms	93	
	Ме	H	Йe	COOMe	Ms	Q4	

0 282 944

_	A	В	Х	Y	Z	Q
5	Мe	H	. Me	COOMe	Ms	95
	Иe	·Ħ	Иe	COOMe	ns Ns	96
	Иe	Ħ	Иe	COOMe	Ms	920
	Мe	Ne	Иe	COOMe	Ms	
10	Me	CI	Йe	COOMe	Ms	Н Н Н Н Н Н О1
	Мe	CF₃	Иe	COOMe	Ms	H
	Иe	0Me	Мe	COOMe	Ms	. H
	Me	SMe	Me	COOMe	Ms	Ħ
15	Me		Me	COOEt	MeS	Ħ
75	Me	H H H	Me	COOEt	MeS0	Ħ
	Me	H	Мe	COOEt	Ms	Ħ
	Me	Ħ	Иe	COOEt	Ms	Q1
	Me	H	Иe	COOEt	Ms	918
20	Me	H	Me	COOEt	Ms	Q13
	Мe	H	Йe	COOEt	Ms	94
	Нe	H	Иe	COOEt	Ms	9 5
	Йe	H H H H	Мe	COOEt	Ms	e 6
	Иe		Иe	C00Et	Ms	922
25	Йe	Me	Me	COOEt	lis	Ħ
	lle	Cl	Me	COOEt	ns	н н н н н н е
	Йe	CF 3	Иe	COOE t	ris .	H
	Ме	0Me	Me	COOEt	ils	H
30	lle	SMe	Ме	COOEt	ls	H
	Мe	<u>H</u>	Мe	· COOCH (CH ₃) ₂	MeS	H
	lle	H	Иe	. COOCH (CH ₃) ₂	MeS0	. Н
	Иe	H	Ме	COOCH (CH ₃) ₂	- Ns	H
	ile	H H H H H	Йe	COOCH (CH ₃) ₂	Ms .	
35	Иe	H	Ме	COOCH (CH ₃) ₂) is	Q12
	lie ~	H,	Ме	COOCH (CH ₃) _z	Ms M	0 9
	île M-	H	Me	COOCH (CH ₃) z	Ms V-	Q4
	ile Ma	H	Me	COOCH (CH ₂) _z	Ms V-	95
40	ile ile	H H	Me	COOCH (CH ₃) ₂	Ns No	96 917
	йe		Me	COOCH (CH ₃) ₂	is No	H
	ne Me	Ме	Йe	COOCH (CH ₃) ₂	en En	
	ne Ne	Cl CF ₃	Me Me	COOCH (CH ₃) z	ns Ns	n n
	ne Ne	OMe	Me Me	COOCH (CH ₃) ₂ COOCH (CH ₃) ₂	ns . Ns	H H H H
45	Иe	: SMe	ne Me	COOCH (CH ₃) z	. ns Ys	Ħ
	lle	H	ne Me	COOMe	Cl	Ħ
	lle	H	Me	COOMe	CI	ä1
		••				

5	<u>A</u>	В	X	Y	Z	Q.			
J	Иe	H	Иe	COOMe	C1	92			
	Мe	H	. Me	COOMe	CI	<u> </u>			
	Мe	H	Me	COOEt	ČĪ	H			
	Мe	H	Ме	COOEt	CI	Ü1			
10	Me	Ħ	Нe	COOEt	CI	92			
	Мe	H	Иe	COOE±	CI	93			
	Мe	H H H H H	Me	COOCH (CH ₃) ₂	CÎ	H			
	Me	H	Иe	COOCH (CH ₃) ₂	ČĪ	ä1			
15	Мe	H	Ме	COOCH (CH ₃) 2	CĪ	92			
	Мe	H	Иe	COOCH (CH ₃) 2	CĪ	<u> </u>			
	lle	H	Me	CON (CH ₃) ₂	MeS	H			
	Me	H	Иe	CON (CH ₃) ₂	MeS0	Ħ			
	Мe	H H	Me	CON (CH ₃) z	Ms	H H H			
20	Мe	H	Иe	CON (CH ₃) ₂	Ms	ā1			
	Мe	H	Me	CON (CH ₂) 2	Ms	Q18 .			
	Йe	H	Ме	CON (CH ₃) ₂	Ms	Q13			
	Мe	H	Me -	CON (CH ₃) z	Ms	Q4			
	Мe	H	Иe	CON (CH ₃) ₂	Ms	45			
25	Мe	H	Me	CON (CH ₃) ₂	Ms	96			
	Мe	H	Мe	CON (CH ₃) ₂	Ms	922			
	Me	Иe	Хe	CON (CH ₃) ₂	Ms				
	Мe	CI -	Me	CON (CH ₃) z	Ms	Н Н Н Н Н			
30	Йe	CF ₃	Йe	CON (CH ₃) _z	Ms	Ĥ			
	Me	0Me	Иe-	CON (CH ₃) ₂	Ms	Ĥ			
	Me	SMe	Иe	CON (CH ₃) ₂	Ms	H			
	Me	H	Me	CON (CH ₃) ₂	- C1	· H			
	Me	H	Йe	CON (CH ₃) ₂	CI	Q1			
35	Me	H	Иe	CON (CH ₃) ₂	CI	92			
	Me	H	Me	CON (CH ₂) ₂	CI	Q3			
	The The	Ħ	Me	COOC_H-	Ms	H			
	lle	H	Мe	COOC ₄ H ₉	. CI	H H H H			
40	Мe	H	Ме	COOCH _z CH (CH ₃) _z	Ms	H			
70	Мe	H	Йe	COOCH ₂ CH (CH ₃) _z	C1	H			
	Me	H	Ме	COOCH (CH3) C2H5	Ms	H			
	Me	H	Иe	COOCH (CH3) C2H5	Cl	H			
	Me	H	Ме	COOC (CH ₃) ₃	Ms	H H			
45	Йe	H	Иe	COOC (CH ₃) ₃	CI	Н.			
	Ме	H	Ме	CONHMe	Ms	H			
	Ме	H	Мe	CONHMe	C1	H			
	Иe	H	Иe	CONHEt	Ms	H			

		В	X	Y	Z	
5						
	Мe	H	Иe	CONHEt	CI	H
	Йe	H	Иe	CONHCH (CH ₃) ₂	Ms	
	Мe	H	Me	CONHCH (CH ₃) ₂	Cl	H
	lle	H	Иe	CONHC (CH ₃) ₃	Ms	H
10	Me	H	Ме	CONHC (CH ₃) ₃	Cl	Н
	Me	Ħ	lle	CONHC ₄ H ₉	Ms	H
	Мe	H	Иe	CONHC₄H•	C1	H
	Me	H	Иe	CONHCH ₂ CH (CH ₃) ₂	Ms	H
15	Иe	H	Иe	CONHCH ₂ CH (CH ₃) ₂	Cl	H
	Мe	H	Иe	CONHCH (CH ₃) C ₂ H ₃	Ms	Ħ
	Ме	Ħ	Иe	CONHCH (CH3) C2H5	CI	H
	Иe	H	Me	CONE t ₂	Ms	H.
	Ме	Ħ	Иe	CONEtz	CI	H
20	Ме	H H	Иe	CON (CH(CH ₂) ₂) ₂	Ms	H
	Иe	H	Me	CON (CH (CH ₃) ₂) ₂	CI	Ī
	Ме	H	Иe	YI.	Ms	H
	Мe	Ħ	Me	<u>YI</u>	CI	Щ
25	Me	H	Иe	¥2 ¥2	Ms	H H H H H H H
-5	Ме	Ħ	lle	Y2	C1	H
	Me	H	Йe	<u> Y3</u>	Ms	Ħ
	Me	H	Йe	Y3	C1	H
	Me M-	H	. Ne	COOPh	Ms Ci	Ħ
30	Йe	H	Иe	COOPH	C1	H
	Me Me	H	Иe	COOCH Ph	Ms	ii.
	ne Me	H H	lie Y-	COOCH CH CH	C1	H H H H
	ne Me	H	Me Me	COOCH CH-CH2	Ms Cl	п
35	ne Me	H.	ne Ne	COOCH ₂ CH=CH ₂ COOCH ₂ C=CH	Ms	<u>п</u> и
33	Ме	H	ne Me	COOCH ₂ C = CH	CI	H.
	7fe	H	ne Ne	C(0) SMe	Ms	Ħ
	Ме	Ħ	ne Ne	C(0) She	Cl	Ħ
	Me	H	ne Ne	C(O)SEt	Ms	Ħ
40	Ме	Ħ	Me	C(0) SE t	ĊĨ	Ĥ
	Йe	Ĥ	ne Ne	C (0) SCH (CH ₃) ₂	Ms	Ħ
	Me		Иe	C (0) SCH (CH ₃) 2	ĊĨ	Ħ
	Иe	Ħ	lle lle	C (0) SC ₃ H ₇	Ms	Ä
45	Me	H H H	Me	C (0) SG3H7	ĊĨ	Ħ
40	Мe	Ħ	iie Ne	C(S) 0Ne	Ms	Ħ
	Йe	Ħ	Me	C(S) Offe	ĊĨ	Ħ
	Йe	Ē	Иe	C(S) OEt	Ms	H
				- ,		

5	<u>A</u>	В	X	Y	Z	Q
	Ме	H	Иe	C(S)OEt	CI	Т.
	Иe	H H	Йe	C(S)OCH(CH ₃) _z	Ms	n n
	Иe	H	Йe	C(S)OCH(CH ₃) _z	CI	п
	· Me	H	Йe	C(S) SC ₃ H ₇	Ms	H H
10	Ме	H H H	Йe	C(S)SCH7	C1	11
	Me ·	Ħ	lie	C(S) She	Ms	11 11
	Me	Ħ	Йe	C(S)SMe	· C1	11.
	life	H	lie	C(S) SEt	Ms	H
15	Мe	H .	Иe	C(S) SEt	- CI	H II
	Мe	H	lle	C(S)SCH(CH ₃) ₂	Ms	H H
	Мe	H H H H	Me	C(S)SCH(CH ₂) ₂	CĨ	Ħ
	Ме	H	lle	C(S)SC ₃ H ₇	Ms	Ħ
	Иe	H	Me	C(S) SC ₃ H ₇	CI	ਸ
20	Иe	H	0Me	COOMe	MeS	Ħ
	Мe	H	0Me	C00Me	MeSO	ннннннннннннн
	Мe	H	0Me	COOMe	Иs	Ħ
	Me	H	0Me	CO0Me	Ms	. Q1
25	Иe	H	0Me	CO0Me	Ms	92
	Me	H	0Me	COOMe	Ms	93
	Me	H	0Me	COOMe	Ms	94
	Me	H	0Me	COOMe	Ms	95
	Иe	H H	0Me	CO0Me	Ms	96
30	Ме	H	0Me	- C00Me	Ms	920
	Ме	Мe	0Me	C00Me	2K	H
	Me	CI	0Me	COOMe	Ms	H
	He Y-	CF₃	0Me	CO0Me	Ms	H -
35	Me Ma	OMe	0Me	C00Me	Ms	H
	Me Me	SMe	OMe	COOMe	Ms	H H H H H
	rie Me	H H.	OMe	COOEt	MeS	H
	ne Ne	H.	OMe	COOE t	MeSO	<u>H</u>
	Me	H	0Me 0Me	COOEt	Ms V-	H
40	Me	H	One OMe	COOEt	Ms Ma	Q1
	ne Me	H		COOEt	Ms V-	Q18
	Me		OMe	COOE t	Ms M-	Q13
	Me	H H	0Me 0Me	COOEt	Ms Ma	94 95
45	Ме	H	one OMe	COOEt	Ms N-	4 5
77	Me	H	one OMe	COOEt	Ms Y-	40 <u>422</u>
	Me	n Me	One OMe	COOEt	Ms Ma	H22
	Me	CI	one OMe	COOEt	Ms Ma	n H
	110	O.L	Orie	COOEt	Ms	п

5	A	В	Х	Y	z	ę.
J	Мe	CF3	0Me	CO0Et	Ms	H
	Мe	0Me	0Me	COOEt	Ms	Н Н Н Н Н
	Me	SMe	0Me	COOEt	Ms	Ĥ
	Me	H	0Me	COOCH (CH ₃) ₂	MeS	Ħ
10	Мe	H	0Me	COOCH (CH ₃) ₂	MeSO	H
	Me	H	0Me	COOCH (CH ₃) z	Ms	H
	Мe	H H H	0Me	COOCH (CH ₃) ₂	Ms	Q 7
	Мe	H	0Me	COOCH (CH ₃) ₂	Ms	Q12
15	Иe	H	0Me	COOCH (CH ₂) ₂	Ms	99
	Me	H	0Me	COOCH (CH ₃) ₂	Ms	94
	Me	H	0Me	COOCH (CH ₂) ₂	Ms	95
-	Me	H	0Me	COOCH (CH ₃) ₂	Ms	96
	Йe	Ħ	0Me	COOCH (CH ₃) ₂	Ms .	917
20	Me	Иe	0Me	COOCH (CH ₃) ₂	lis	H
	Иe	Cl	0Me	COOCH (CH ₃) ₂	Ms	H
	Me	CF:	0Me	COOCH (CH ₃) ₂	Ms	H H H H H
	Me	0Me	0Me	COOCH (CH ₃) ₂	Ms	H
25	Me	SMe	0Me	COOCH (CH ₃) ₂	Ms ·	<u>H</u>
	Мe	Ħ	0Me	COOMe	CI	H
	. Ne	H	OMe	CO0Me .	CI	<u>Q1</u>
	Иe	Ħ	0Me	COOMe	CI	92
	Иe	. H H	0Me	COOMe	CI	ãз
30	Йe	н	0Me	COOEt	C1	H
	Ме	H	0Me	COOEt	CI	Q1
	Ме	Ħ	0Me	COOEt	CI C7	92
	Me	H H	0Me	COOEt	C1	g 3
35	Ме	11	0Me	COOCH (CH ₃) ₂	C1	H Q1
-	Ме	<u>п</u>	OMe	COOCH (CH ₃) ₂	C1 C1	92
	Me -Mo	H	0Me 0Me	COOCH (CH ₃) ₂ COOCH (CH ₃) ₂	CI	4 2
	-Me Me	H H	one OMe	CON (CH ₃) ₂	MeS	
	ne Me	H	one OMe	CON (CH ₃) z	MeSO	H H H Q1
40	ne Ne	Ħ	one OMe	CON (CH ₃) ₂	Ms	Ħ
	Иe	H	0Me	CON (CH ₃) ₂	Ms	rã
	ne Me	H	one OMe	CON (CH ₃) ₂	en Zn	<u> </u>
	Ие	H	one OMe	CON (CH ₂) ₂	Ms	Q13
45 ·	Иe	H	0Me	CON (CH ₃) ₂	Ms	94
+0	Me	H	OMe	CON (CH ₃) z	Ms	95
	Me	H	OMe	CON (CH ₃) z	Ms	96
	Иe	Ħ	0Me	CON (CH ₃) ₂	Ms	922
			AHE	S CENTAGO		

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5	A	В	Х	Y	Z	Q
Ū	Me	Ме	0Me	CON (CH ₃) z	Иs	Н
	Иe ·	C1	0Me	CON (CH ₃) ₂	Ms	Ħ
	Иe	CF ₃	0Me	CON (CH ₃) ₂	Ms	H H H H
70	Мe	0Me	0Me	CON (CH ₃) ₂	Ms	Ħ
10	Иe	SMe	0Me	CON (CH ₃) ₂	Ms	Ĥ
	Мe	H	0Me	CON (CH ₃) z	CI	Ħ
	Иe	H	0Me	CON (CH ₃) ₂	CI	<u>0</u> 1
	Me	H	0Me	CON (CH ₃) ₂	CI	92
15	Иe	H	OMe	CON (CH ₃) 2	CI	93
	Мe	H	OMe	COOC ₄ H ₉	Ms	
	Иe	H	OMe .	C00C4H9	ČĪ	Ĥ
	Мe	H	0Me	COOCH ₂ CH (CH ₃) ₂	Ms	Н Н Н Н
	Me	H	0Me	COOCH ₂ CH (CH ₃) ₂	CI	H.
20	Мe	H	OMe	COOCH (CH3) C2H5	Ms	H
	Йe	H	0Me	COOCH (CH2) C2H5	C1	- H - H
	Мe	H.	0Me	COOC (CH ₃) ₃	Ms .	Ħ
	Иe	H	OMe	COOC (CH ₃) 3	Cl	H
25	Me	Ħ	0Me	CONHMe	. Ms -	H
20	Иe	H	0Me	CONHMe	C1	H
	lle	H	0Me	CONHEt	Ms	H
	Me	H	0Me	CONHEt	Cl	H
	Иe	H	. OMe	CONHCH (CH ₃) ₂	Ms	H
30	Иe	H	0Me	CONHCH (CH ₃) ₂	Cl	H
	Me	H	0Me	CONHC (CH ₃) ₃	Ms	H
	Me	H	0Me	CONHC (CH ₃) ₃	C1	. Н
•	Me	H	0Me	CONHC ₄ H ₄	Ms	. Н
	Me	H	0Me	CONHC ₄ H ₄	CI	H.
35	Мe	H	0Me	CONHCH _z CH (CH _z) _z	Ms	. Н
	Me	H	0Me	CONHCH2CH (CH3) 2	CI	H
	-Me	H	0Me	CONHCH (CH ₃) C ₂ H ₅	Ms	H
	Me	H	0Me	CONHCH (CH3) C2H5	C1	<u>H</u> -
40	Мe	H	0Me	CONEtz	Ms	H
	Me	H	OMe	CONEtz	C1	H
	Me	Ħ	OMe	CON (CH (CH ₃) ₂) ₂	Ms	H
	Ме	Ħ	0Me	CON (CH(CH ₃) ₂) ₂	CI	H
	Me	H	0Me	Yl	Ms	·H
45	Me	H	0Me	<u>Y1</u>	C1	H
	Мe	Ħ	0Me	<u>Y2</u>	Ms	H
	Me	Ħ	0Me	<u>¥2</u>	C1	H
	Мe	H	0Me	Y3	Ms	H

	A	· Б	X	Y	Z	Q
5	Me	H	0Me	. УЗ	CI	
	Me	Ħ	0Me	COOPH	Ms	Ω. Π
	Ме	H	0Me	COOPh	C1	
	Me	Ħ	OMe	COOCH ₂ Ph	Ms	n n
10	Me	Ħ	0Me	COOCH ₂ Ph	Cl	n n
-	Мe	Ħ	0Me	COOCH 2CH=CHz	Ms	n n
	Me	H	0Me	COOCH ₂ CH=CH ₂	C1	Д 17
	Мe	Ħ	0Me	COOCH ₂ C=CH	Ms) II
	ne Ne	H	OMe	COOCH ₂ C=CH	ris C1	п
15	Me	H	one OMe	C(0) SMe		n T
	Me	H	one OMe	C (0) 2N=	Ys C1	п
	ne Me	H		C (0) SMe		п
	ne Me	п П	OMe	C(0) SEt	Ms Cl	п
	ne Me	H	OMe	C(0) SEt		n T
20		H	OMe	C (0) SCH (CH ₃) ₂	Ms Cl	<u>п</u>
	Me Me	H H	OMe	C (0) SCH (CH ₃) ₂	Ç1	· Д
	Me	П.	OMe	C(0) SC ₃ H ₇	Ms Ci	<u> </u>
	Me V-	H	0Me	C(0)SC ₃ H ₇	C1	Д
25	Иe	H	0Me	C (S) 0Me	Ms	<u>H</u>
23	lie L	H	0Me	C (S) 0Me	Ç1	Щ
	Иe	H	0Me	C(S) 0Et	Ms .	<u>H</u>
	Ме	H	0Me	C(S) 0Et	ÇI -	H
	Me	H	OMe .	C(S)OCH(CH ₃) ₂	Ms	Η̈́
30	Me	H	-OMe	C(S) OCH(CH ₃) ₂	ĞI	Ħ
	Me	H .	OMe	C(S) SC ₃ H ₇	Ms Cl	H H H H H
	Me Me	ii.	0Me	C(S)SC ₃ H ₇	C1	H
	Me	H	0Me	C(S)SMe	Ms .	H
	Me	H	0Me	C (S) SMe	ÇI	Ħ
35	Иe	H	0Me	C(S) SEt	Ms	H H H
	Дe	H	0Me	C(S) SEt	C1	Щ
	ile	H	0Me	C(S)SCH(CH ₃) ₂	Ms	. Я
	Ме	H	0Me	C(S)SCH(CH ₃) ₂	Ç1	. H
40	Me	H	0Me	C(S)SC ₃ H ₇	Ms	n
₩.	Me	H	0Me	C(S)SC ₃ H ₇	Č1	H
	Ме	H	Br	COOMe	Ms	H
	Me	H	Br	COOMe	C1	H H
	Ме	H	Br	COOEt	Ms	П
45	Me	H	Br	COOEt	Ç1	H
	Me	H	Br	COOCH (CH ₃) _z	Ms	H
	Иe	H	Br	COOCH (CH ₃) ₂	C1	H .
	Me .	H	Br	CON (CH ₂) ₂	z z z z z z z z z z z z z z z z z z z	H

						
5	<u>A</u>	В	X	Y	Z	େ
_	Мe	H	Br	CON (CH ₃) z	CI	Ħ
	Me	H	Br	CONHMe	Ms	H
	Мe	H H H	Br	CONHE t	Ms	Ħ
	Me	H	Br	CONHC ₃ H ₇	Ms	H
10	Мe	H	Br	CONHCH (CH ₃) ₂	Ms	H
	Me	H	Br	CONHC (CH ₃) ₃	Ms	H
	Мe	H	Br	CONE t ₂	Ms	H
	Иe	H H	Br	CONHC (CH ₃) ₃	Ms	Ħ
15	Мe	H	Br	CONHC 4H 4	Ms	H
	Me	H	Br	CONHC ₄ H ₉	Ms	H
	Мe	H	Br	CON (CH(CH ₃) _z) _z	Ms	H
	Me	H	Br	Y1	Ms	H
	Me	H	Br	Y2	Ms	H
20	Иe	H	Br	COOPh	Ms	
	Me	H	Br	COOCH _z Ph	Ms	H
	Me	H	Br	COOCH _z CH=CH _z	Ms	H
	Me	H	Br	COOCH ₂ C≡CH	Ms ·	H
25	Me	H	GE t	C00Me	Ms	H H H H H H H H H H
25	Мe	H	0E t	C00Me	C1	H
	Me	H	0E t	C00Et	Ms	H
	Me	Ħ	0Et	COOEt	Cl	H
	Me	H	. OEt	COOCH (CH ₃) z	Ms	H
30	Me	Ħ	OEt	COOCH (CH ₃) z	C1	H
	Иe	H	0Et	CON (CH ₃) z	Ms	H
	Me	H	OEt	CON (CH ₃) ₂	CI	H
	Йe	H	0E t	CONHMe	Ms	H
	Йe	H	0Et	CONHE t	Ms	H
35	Me	H	0E t	CONHC 3H 7	Ms	H _.
	Мe	H	0Et	CONHCH (CH ₃) ₂	Ms	H H H H
	~Me	H	0Et	CONHC (CH ₃) ₃	Ms .	Ħ .
	Йe	H	0Et	CONEtz	Ms .	H
40	Ме	H	0E t	CONHC (CH ₃) ₃	Иs	H
	Ме	H	0E t	CONHC.H.	Ms	H
	Мe	H	0Et	CONHCAH-	Ms	H
	Me	H	0E t	CON (CH(CH ₃) _z) _z	Ms	H rr
	Ме	H	0E t	YI.	Ms	n T
45	Me ·	H	OEt	¥2	. Ms	n .
	Me M-	H	0Et	COOPh	Ms V	n u
	Ме	H	0Et	COOCH₂Ph	Ms V-	H H H H
	Me	H	OE t	COOCH ₂ CH=CH ₂	Ms	<u>a</u>

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5	A	В	Х	Y	. Z	Q
J	Йe	H	0Et	COOCH ₂ C≡CH	Ms	H
•	Иe	H	OCH (CH ₃) ₂	C00Me	Ms	H
	Мe	H	OCH (CH ₃) ₂	C00Me	CI	H
	Мe	H	$OCH(CH_3)_2$	COOE t	Ms	H
10	Мe	H	OCH (CH ₃) ₂	COOEt	C1	Ĥ
	lie	Ħ	OCH (CH ₃) _z	COOCH (CH ₃) ₂	Ms	Ħ
\checkmark	Иe	H H H	OCH (CH ₃) ₂	COOCH (CH ₂) ₂	C1	Ħ
	Мe	Ħ	OCH (CH ₃) z	CON (CH ₃) ₂	Ms	Ħ
15	Me	H	OCH (CH ₃) ₂	CON (CH ₃) ₂	C1	Ħ
	Мe	Ħ	OCH (CH ₃) ₂	CONHMe	Ms	Ĥ
	Йe	Ē	OCH (CH ₃) ₂	CONHEt	Ms	Ħ
	Иe	Ħ	OCH (CH ₂) ₂	CONHC 3H7	Ms	Ħ
	Ме	Ħ	OCH (CH ₃) z	CONHCH (CH ₃) ₂	Ms	Ħ
20	Мe	H H H	OCH (CH ₃) ₂	CONHC (CH ₃) ₃	Ms	Ħ
	Иe	Ħ	OCH (CH ₃) ₂	CONEtz	Ms.	ਜ
	Мe	Ħ	OCH (CH ₃) ₂	CONHC (CH ₃) ₃	Ms	Ħ
		' Ä	OCH (CH ₃) ₂	CONHC 4H 9	Ms	ਜ
	lle	Ħ	OCH (CH ₃) ₂	CONHC ₄ H ₉	Ms .	Ħ
25	lle	Ħ	OCH (CH ₃) ₂	CON (CH(CH ₃) ₂) ₂	Ms .	Ħ
	Иe	H H H	OCH (CH ₃) ₂	Y1	Ms	
	lie	Ħ	OCH (CH ₃) ₂	Ŷ 2	Ns.	Ħ
	Me	Ħ	OCH (CH ₃) z	соорь	Ms	Ħ
30	Иe	Ħ	OCH (CH ₃) _z	COOCH ZPh	Ms.	Ħ
30	Me	H H	OCH (CH ₃) ₂	COOCH 2 CH=CH2	Ns.	Ħ
	Иe	Ħ	OCH (CH ₃) ₂	COOCH ₂ C = CH	Ms.	Ħ ·
	Иe	Ħ	CH ₂ OCH ₃	COOMe	Νs	· #
	Иe	Ħ	CH ₂ OCH ₃	COOMe	C1	Ħ
35	Ме	Ħ	CH _z OCH ₃	COOEt	Ms	Ħ
	Иe	H H H	CH ₂ OCH ₃	COOEt	CI	Ĥ
	Me	Ĥ	CH ₂ OCH ₃	C00CH (CH ₃) ₂	Ms	Ħ
	Иe	H	CH ₂ OCH ₃	COOCH (CH ₃) z	· CI	Ħ
	Иe	Ħ	CH ₂ OCH ₃	CON (CH ₃) ₂	Ns	Ħ
40	Мe	Ħ	CH ₂ OCH ₃	CON (CH ₃) ₂	Cī	Ħ
	Me	H.	CH ₂ OCH ₃	CONHMe) SK	Ĥ
	Йe		CH ₂ OCH ₃	CONHEt	Ms	
	Me	H H	CH ₂ OCH ₃	CONHC ₂ H ₇	Ms	Ħ
45	Ме	Ĥ	CH ₂ OCH ₃	CONHCH (CH ₃) ₂	er.	H H H H
40	Иe	H	CH ₂ OCH ₃	CONHC (CH ₃) ₂	XIS .	Ħ
	йe	H	CH ₂ OCH ₃	CONEtz	iis .	. Ĥ
	Me	Ħ	CH ₂ OCH ₃	CONHC (CH ₃) ₃	Ys	Ħ
			OUZOOU3	courte (on 3) 3		

-A	L	В	X	Y	Z	Q
}	fe	H	CH20CH3	CONHC ₄ H ₉ .	Ms	H
}	Me	H	CHzOCHz	CONHC 4H -	Ms	H
}	1e	H	CH 20CH 3	CON (CH(CH ₃) ₂) ₂	Ms	H
ì	Me	H	CH ₂ OCH ₃	Yl	Ms	H
ŀ	ie .	H	CH ₂ OCH ₂	Y2	Ms	H
ì	Me	H	CH ₂ OCH ₃	COOPH	Ms	H
}	1e	H	CH20CH3	COOCH ₂ Ph	Ms	H
	Me	H	CH2OCH3	COOCH CH=CH2	Ms	H
	fe .	Ĥ	CH2OCH3	COOCH ₂ C≡CH	Ms	Ħ
	Et	Ħ	C1	C00Me	MeS	Ħ
	Ēŧ	Ħ	C1	COOMe	MeSO	Ħ
	Et	Ħ	Ci	COOMe	Ms	Ħ
	Et	Ĥ	Či	COOMe	Ms	<u> </u>

	A	В	X.	Y	Z	G
5	Et	H	C1	COOMe	Ms	92
	Et Et	H H	CI Cl	COOMe COOMe	ns Ns	93 94
	Et	H	CI	COOMe	Ns	Q 5
10	Et	H	Cl	C00Me	Ms M	Q6
	Et Et	H Me	CI Cl	COOMe COOMe	ns Ns	920 H
	Et	CI	C1	C00Me	ris	Ħ
15	Et Et	CF 3 OMe	C1 CI	COOMe COOMe	iis Iis	HHHHHHH
	Et	SMe	CI	COOMe	Ms	Ĥ
	Et	H	CI	COOEt	MeS	H
20	Et Et	H H	Cl Cl	COOEt COOEt	NeSO Ns	H H
ΣŲ	Et	H	C1	COOEt	Ms	Q 1
	Et Et	H	CI CI	COOE± COOE±	Ms Ms	918 913
	Et	H H H H H	C1 C1	COOEt	ris Vis	Q4
25	Et	H	C1	COOEt	lis	95
	Et Et	H	CI Cl	COOEt COOEt	en en	96 922
	Et	Me 1	Cl	COOEt	Ms	
30	Et Et	Cl CF₃	CI CI	COOEt COOEt	. Ms Ms	H
	Et	OMe	CI	COOEt	Ms	Ħ
	Et	SMe	C1	COOEt	Ms Y-S	H
35	Et Et	H H	CI CI	COOCH (CH ₃) ₂ COOCH (CH ₃) ₂	MeS MeSO	Н
	Et	H	CI	COOCH (CH ₃) ₂	Ms	H H H H H H Q7
	Ēt Et	H H	CI CI	COOCH (CH ₂) ₂ COOCH (CH ₃) ₂	Ms Ms	Q12
	Et	H	CI	COOCH (CH ₃) _z	Ms .	gg
40	Et	H H	CI CI	COOCH (CH ₃) ₂	Ms Ms	94 95
	Et Et	H	C1 C1	COOCH (CH ₂) ₂ COOCH (CH ₃) ₂	zk zk	Q6
	Et	H	CI	COOCH (CH ₃) ₂	Ms	Q17
45	Et Et	Me CI	C1 C1	COOCH (CH ₃) _z COOCH (CH ₃) _z	Ms Ms	H H H
	Et	CF₃	C1	COOCH (CH ₃) ₂ -	Ms	H
	Et_	0Me	Cl	COOCH (CH ₃) ₂	Ms	<u>H</u>

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5	A.	В	X	Y	Z	Q
J	Et	SMe	Cl	COOCH (CH ₃) ₂	äs	H
	Et	H	CI	C00Me	C1	Ĥ
	Et	H	CI	COOMe	CI	<u> </u>
	Et	H H H	CI	COOMe	ĊĨ	92
10	. Et	H	Cl	COOMe	CI	<u> </u>
	Et	H	Cl	COOEt	CI	Ħ
	Et	H	C1	COOEt	CI	ā1
	Et	Ħ	C1	COOEt	CI	<u>Q2</u>
15	Et	H	C1	COOEt	C1	Q3
	Et	H	C1	COOCH (CH ₃) ₂	CI	H
	Et	H	C1	COOCH (CH ₃) ₂	Cl	Q1
	Et	H	Cl	COOCH (CH ₃) ₂	CI	<u> 92</u>
	Et	H	C1	COOCH (CH ₃) ₂	C1	- 03
20	Et	H	C1	CON (CH ₃) ₂	MeS	H
	Et	H	C1	CON (CH ₃) z	MeS0	H
	Et	H	Cl	CON (CH ₃) _z	lis	H
	Et	H	CI .	CON (CH ₃) ₂	Ms	Q1
25	Et	Ħ	CI	CON (CH ₃) ₂	Ms	9 18
25	Et	H	C1	CON (CH ₃) ₂	Ms	Q13
	Et	Ħ	CI	CON (CH ₃) ₂	Ms	84
	Et	Ħ	C1	CON (CH ₃) ₂	Ms	95
	Et	Ħ.	CI	CON (CH ₃) ₂)is	96
30	Et	H	C1	CON (CH ₃) z	Ms	922
	Et Et	Me CI	C1	CON (CH ₃) ₂	Ms	H
	Et Et	CF ₌	. CI	CON (CH ₂) ₂	Ms V	H H
	Et	OMe	C1 C1	CON (CH ₂) ₂	Ms	H
35	Et	SMe	CI	CON (CH ₃) ₂ CON (CH ₃) ₂	Ms V-	H H
00	Et	H	CI	CON (CH ₃) ₂	Ms Cl	n H
	Ēt	H	CI	CON (CH ₃) ₂	CI	Q1
	Et	H	CI	CON (CH ₃) 2	C1	Q 2
	Et	Ħ	CI	CON (CH ₃) ₂	CI	93
40	Et	Ĥ	CI	COOC_4H_4	Ms	H
	Et	Ĥ	CĪ	COOC4H4	CI	Ä
	Ēt	Ħ	CI	COOCH ₂ CH (CH ₃) ₂	ăs	Ħ
	Et	Ĥ	ČÌ	COOCH ₂ CH (CH ₃) ₂	CI	H
45	Et	Ĥ	ČĪ	COOCH (CH ₃) C ₂ H ₅	Ms	Ħ
₩	Et	Ĥ	CÎ	COOCH (CH ₃) C ₂ H ₅	CI	H H
	Et	H	ČĪ	COOC (CH ₃) ₃ -	Ms	H
	Et	H	CI	COOC (CH ₃) 3	C1	H
				-· -		

<u>A</u>	В	X	Y	Z	ୡ
Et	Ħ	CI	CONHMe	Ms	H
E‡	H	Cl	CONHMe	CI	H
Et	H H H H	CI	CONHE È	Ms	Ĥ
Et	H	CI	CONHE ±	CI	. #
Et	H	C1	CONHCH (CH ₃) ₂	žk	H H
Et	H	C1	CONHCH (CH ₃) z	CI	11
Et	Ħ	ČĪ	CONHC (CH ₃) ₂	Ms	Д 17
Et	Ħ	Ci	CONHC (CH ₃) ₃	C1	<u>п</u>
Et	Ĥ	Č1	CONNC (CH3) 3		п
Et	H	CI		Ms	н
Et	п п		CONHC 4H,	C1	Н
5 L	H	CI	CONHCH 2CH (CH3) 2	Ms	H
Et	H	CI	CONHCH ₂ CH (CH ₃) ₂	Cl	
Et	. <u>H</u>	C1	CONHCH (CH3) C2H5	Ms	H
Et	H	CI	CONHCH (CH3) C2H5	CI	Ħ
Et	H	Cl ·	CONEtz	Ms	Ħ
Et	H	C1	CONE tz	CI	Ħ
Et	H	C1	CON CONTON))	Ns	ü
Et	Ħ	ČÎ	CON CONTON)	Cl	11
Et	Ħ	· ČÎ	CON (CH(CH3)2)2		Ω
Et	H H H H	· C1	Y1 Y1	Ms	п
Et		C1	11 VO	Ç1	H H H H H
Et	11		Y2 Y2 Y3	Ms	Ħ
Et	Д 11	CI	12	CI	H
Et	Д 77	. Cl	13	Ms	H
	n	CI	Y3	CI	H
Et	H	C1	COOPh	Ms	H H
Et	<u>H</u> .	CI	COOPh	Cl	H
Et	H	CI	COOCH₂Ph	zK	H
Et	H	C1	COOCH _z Ph	CI	H
Et	H	CI	COOCH ₂ CH=CH ₂	Ms	Ħ
Et	H	C1	COOCH ₂ CH=CH ₂	Cl	H H
Et	H	C1	COOCH ₂ C≡CH	zK	Ħ
Et		ĊĨ	COOCH ₂ C≡CH	Cī	H H H
Et	Ħ	ĊĨ	C (0) SMe	Ms .	п
Et	Ĥ	Ci	C (0) SMe	CI	H
Et					
Et	ä	CI CI	C(0) SEt	Ms Ci	H
Et	H H H		C(0) SE t	CI	H
Et	n o	C1	C(0) SCH(CH ₃) ₂	Ms	H
	H	CI	C(0)SCH(CH ₃) _z	CI	H
Et	H	C1	C (0) SC3H7	Ms	H
Et	H	Cl	C(0)SC ₃ H ₇	Cl	H

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5	A	В	X	Y	Z	Q
10	年年年 年七十十 年	нинининининин	C1 C1 C1 C1 C1 C1	C(S) OMe C(S) OMe C(S) OEt C(S) OEt C(S) OCH(CH ₃) ₂ C(S) OCH(CH ₃) ₂ C(S) SC ₃ H ₇	Ms Cl Ms Cl Ms	ни
15	Et Et Et Et	H H H H	C1 C1 C1 C1 C1	C(S)SC ₃ H ₇ C(S)SMe C(S)SMe C(S)SEt C(S)SEt	Ms C1 Ms C1 Ms C1	H H H H H
20	Et Et Et Et	Ħ	CI CI CI CI Me	C(S) SCH(CH ₃) ₂ C(S) SCH(CH ₃) ₂ C(S) SC ₃ H ₇ C(S) SC ₃ H ₇ COOMe	Ms C1 Ms C1 MeS	H H H H
25	EEEEE.	H H H H	Me Me Me Me Me	COOMe COOMe COOMe COOMe	MeSO Ms Ms Ms Ms	H H Q1 Q2 Q3
30	Et Et Et Et	H H H H Me	Me Me Me Me Me	COOMe COOMe COOMe COOMe COOMe	Ms Ms Ms Ms Ms	94 95 96 920
35	Et Et Et Et	C1 CF ₃ OMe SMe H	Me Me Me Me Me	COOMe COOMe COOMe COOMe COOE±	Ms Ms Ms Ms Ms MeS	Н Н Н Н Н Н
40	E t t t t E E E E	H H H H	Me Me Me Me	COOE± COOE± COOE± COOE±	MeSO Ms Ms Ms	Q1 Q18
45	Et Et	H H H H	Me Me Me Me	COOEt COOEt COOEt COOEt	Ms Ms Ms Ms	913 94 95 96

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	A.	В	X	Y	Z	Q.
5	E.L	H	W_	COOEt	Ms	922
	Et Et	n Me	Ие Ие	COOEt	ns Ns	H H
	Et	Cl	ne Me	COOEt	Ms	H
	Et	CF ₃	ne Me	COOEt	Ms	Ħ
10	Et	OMe	ile ile	COOEt	zK	Н Н Н Н Н Н С7
	Et	SMe	Me	COOEt	Ms	Ħ
	Et		ne Ne	COOCH (CH ₃) _z	MeS	Ħ
	Et	Ħ	Иe	COOCH (CH ₃) z	MeSO	Ħ
	Et	Ĥ.	Иe	COOCH (CH ₃) ₂	Ms	Ĥ
15	Et	Ħ	Ме	COOCH (CH ₃) ₂	Ms	97
	Et	Ħ	Йe	COOCH (CH ₃) ₂	Ms	Q12
	Et	H	Me	COOCH (CH ₃) ₂	Ms	0 9
	Et	H H H H H H H H H H H H H H H H H H H	Йe	COOCH (CH ₃) ₂	Ms	04
20	Et	H	Мe	COOCH (CH ₃) ₂	Ms	9 5
	Et	H	Иe	COOCH (CH ₃) _z	Ms .	98
	Et	H.	Me	COOCH (CH ₃) ₂	Ms	917
	Et	Иe	Иe	COOCH (CH ₃) _z	zľí .	<u>H</u>
	Et	CI	Мe	COOCH (CH ₃) ₂	Ms	H H H H H H H H H H H H H H H H H H H
25	Et	CF ₃	Иe	COOCH (CH ₃) ₂	eM	H
	Et	0Me	Me	COOCH (CH ₃) ₂	Ms	H
	Et	SMe	Me Me	COOCH (CH ₃) ₂	Ms	H
	Et	H	Me	COOMe	Cl	H
30	Et	H H	lle	COOMe	C1	UI.
	Et	H	Me	COOMe	C1	42
	Et	H H H	Иe	COOMe	C1	H3
	Et	H	Ме	COOEt	C1	<u>ц</u>
	Et	H	Ме	COOE t	Cl Cl	no AT
35	Et	11	Me Me	COOEt	C1	03
	Et	H	Иe	COOEt COOCH (CH ₃) z	C1	H.
	Et	H H-	Me Me	COOCH (CH ₃) ₂	CI	וֹם
•	Et Et	п.	Me Mo	COOCH (CH ₃) ₂	CI	92
40	Et	H H	Me Me	COOCH (CH ₃) ₂	ČĪ	93
	Et	H H		CON (CH ₃) ₂	MeS	Ħ
	E +	H	йе йе	CON (CH ₃) z	MeSO	93 H H H 91
	Et	H H	ne Me	CON (CH ₃) z	Ms	Ĥ
	Et	H	ne Me	CON (CH ₃) z	zK	91
45	Et	H	iie Ne	CON (CH ₃) z	Ms	918
	Et	Ħ	-He	CON (CH ₃) ₂	Ms	Q13
	Et	H	Иe	CON (CH ₃) z	Ms	94
		-				

Et H Me $CON(CH_3)_2$ Et H Me $CON(CH_3)_2$ Et H Me $CON(CH_3)_2$	Ms Ns Ns	Q5 Q6
Et H Me $CON(CH_{\pi})_{\pi}$	Ms Ms	9 6
	Ms	<i>a</i> 0
Et H Me CON(CH ₃) ₂		922
Et Me Me $CON(CH_3)_2$	Иs	
TO Et CI Me CON (CH ₃) $_2$	Ms	Ħ
Et CF ₃ Me CON(CH ₃) ₂	Ns.	Ħ
Et OMe Me CON(CH ₃) ₂	Ms	Ħ
Et SMe Me CON(CH ₃) ₂	Ms	H H H H
15 Et H Me CON(CH ₃) 2	C1	· H
Et H Me $CON(CH_3)_2$	CI	Q1
Et H Me CON(CH ₃) ₂	CI	92
Et H Me $CON(CH_3)_z$	CI'	9.3
Et H Me COOC ₄ H ₉	Ms	H
20 Et H Me COOC ₄ H ₉	Cl	H
Et H Me COOCH ₂ CH(CH ₃) ₂	Ms	H
Et H Me $COOCH_2CH(CH_3)_2$	CI	H
Et H Me COOCH (CH ₃) C ₂ H ₅	Ms	ннннннннннннннннн
Et H Me COOCH(CH ₃)C ₂ H ₅	CI	<u>H</u>
ET H HE CUUC(Ch3/3	Ns.	H
Et H Me $COOC(CH_3)_3$	CI	H
Et H Me CONHMe	Ms	H
Et H Me CONHMe	ÇI	H
30 Et H Me CONHEt	Ms Ci	H H
Et H Me CONHEt	C1	n u
Et H Me CONHCH (CH ₂) ₂	Ms Cl	. <u>II</u>
Et H Me CONHCH (CH ₃) ₂ Et H Me CONHC (CH ₃) ₂	Ms	II II
Et H Me CONHC (CH ₃) ₃ 35 Et H Me CONHC (CH ₃) ₃	Cl	n n
Et H Me CONHC (Ch3) 3	Ms	H H
Et H Me CONHC ₄ H ₄	CI	Ä
Et H Me CONHCH ₂ CH (CH ₃) ₂	Ms	H .
Et H Me CONHCH ₂ CH (CH ₃) ₂	CI	Ĥ
40 Et H Me CONHCH (CH ₃) C ₂ H ₅	Ms	Ħ
Et H Me CONHCH (CH ₃) C ₂ H ₅	CI	H
Et H Me CONEtz	Ms	H
Et H Me CONEtz	CI	Н Н Н Н
45 Et H Me CON (CH(CH ₂) ₂) ₂	Ms	H
Et H Me CON (CH(CH ₃) _z) _z	C1	H
Et H Me Y1	Ms	H H
Et H Me Yl Et H Me Yl	C1	H

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	A	В	Х	Y	Z	Q
5	Et	H	Me	¥2	Ms	U
	Et	Ħ	ne Me	¥2	C1	ншнинининининининининининининининини
	Ēt	H H	Me	¥3	Ms	n n
•	Et	Ĥ	Ме	¥3	C1.	ä T
10	Et	Ë	Йе	СООРЬ	Ms	п
	Et	H	Ме	COOPh	C1	ä
	Et	Ħ	Me	CCOCH ₂ Ph	Ms	Ħ
	Εt	H	Йe	COOCH ₂ Ph	CI	Ħ
	Et	H	Me	COOCH CH=CH2	Ms	Ħ
15	Et	Ħ	Иe	COOCH ₂ CH=CH ₂	C1	Ħ
	Et	Ħ	Me	COOCH _z C≡CH	Ms	H
	Et	H	lle	COOCH ₂ C=CH	CI .	H
	Et	Н .	Иe	C (0) SMe	Ms .	H
20	Et	H	Иe	C (0) SMe	C1	H
	Et	<u>H</u> .	Me	C(0) SEt	Ms	H
	Et	Ħ	Me	C(0) SEt	C1	H
	Et	H	Me	C (0) SCH (CH ₃) ₂	Ms	<u>H</u> .
25	Et	H H H H	Иe	C(0)SCH(CH ₃) ₂	C1	H
25	Et Et	H H	Ме	C(0) SC ₃ H ₇	Ms Ci	H
	Et	п Н	Me Me	C(0) SC ₂ H ₇	C1	n T
	Et	· H	Me Me	C(S) 0Me	Ms C1	11
	Et	H	. ne Me	C(S)0Me C(S)0Et	Ms Ms	П П
30 -	Et	H	ие Ие	C(S)OEt	CI	n u
-	Et	Ħ	Me	C(S) OCH (CH ₃) _z	Ms	H II
	Et	H	Иe	C(S)OCH(CH ₃) ₂	CI	Ħ
	Et	Ħ	Ме	C(S) SC ₃ H ₇	Ms	Ĥ
35	Et	H	Йe	C(S) SC ₃ H ₇	C1	Ĥ
	Et	H H	Мe	C (S) SMe	. Ms	H
	Et	H	Йe	C(S)SMe	CI	H
	Et	H	Me	C(S)SEt	Ms	H
	Et	H	Иe	C(S)SEt	CI	H
40	Et	H	Иe	C(S)SCH(CH ₃) ₂	Ms	H
	Et	H	lle	C(S)SCH(CH ₃) _z	ÇI	
	Et	H H	Йe	C(S)SC ₃ H ₇	Ms	H
	Et	H	Ме	- FR ₂ D2(2) D	CI V-C	H H H
45	Et	H	0Me	COOMe	MeS N-SO	<u>п</u> च
	Et Et -	H - H	OMe	COOMe	MeSO	H
	Et -	n H	0Me 0Me	COOMe COOMe	Ms Ms	Q 1
	٠٠٠	. ц	OUE	Coone	11/2	

Et Me OMe COOMe Ms H Et CI OMe COOMe Ms H 15 Et CF: OMe COOMe Ms H Et OMe OMe COOMe Ms H Et SMe OMe COOMe Ms H Et H OME COOME Ms H	
Et H OMe COOMe Ms Q2 Et H OMe COOMe Ms Q3 Et H OMe COOMe Ms Q4 Et H OMe COOMe Ms Q5 Et H OMe COOMe Ms Q5 Et H OMe COOMe Ms Q6 Et H OME COOME Ms Q6	Q
Et H OMe COOMe Ms Q3 Et H OMe COOMe Ms Q4 Et H OMe COOMe Ms Q5 10 Et H OMe COOMe Ms Q6 Et H OMe COOMe Ms Q6 Et H OME COOME Ms Q2	02
Et H OMe COOMe Ms Q4 Et H OMe COOMe Ms Q5 10 Et H OMe COOMe Ms Q6 Et H OMe COOMe Ms Q20	03
Et H OMe C00Me Ms Q5 10 Et H OMe C00Me Ms Q6 Et H OMe C00Me Ms Q2	
Et H OMe COOMe Ms 920	ดิริ
Et H OMe COOMe Ms 920	<u> 96</u>
	920
Et CI OMe COOMe Ms H 15 Et CF ₂ OMe COOMe Ms H Et OMe OMe COOMe Ms H Et SMe OMe COOMe Ms H Et H OMe COOEt MeS H	Ħ
$_{15}$ Et CF $_{3}$ OMe COOMe Ms H Et OMe OMe COOMe Ms H Et SMe OMe COOMe Ms H Et H OMe COOEt MeS H	Ħ
Et OMe OMe COOMe Ms H Et SMe OMe COOMe Ms H Et H OMe COOEt MeS H	H
Et SMe OMe COOMe Ms H Et H OMe COOEt MeS H	Ħ
Et H OMe COOEt MeS H	H
	H :
Et H OMe COOEt MeSO H	H
20 Et H OMe COOEt Ms H	H
Et H OMe COOEt Ms 41	91
Et H ONe COOEt Ms Q18	Q18
Et H OMe COOEt Ms 913	Q13
Et H OMe COOEt Ms Q1 Et H OMe COOEt Ms Q18 Et H OMe COOEt Ms Q13 Et H OMe COOEt Ms Q4 Et H OMe COOEt Ms Q5 Et H OMe COOEt Ms Q5 Et H OMe COOEt Ms Q6 Et H OME COOEt Ms Q6	94 95 96 922
Et H OMe COOEt Ms 95	95
Et H OMe COOEt Ms Q6	Q 6
	922
Et Me OMe COOEt Ms H	Ħ
30 Et CI OMe COOEt Ms H	<u>H</u>
Et CF3 OMe COOEt Ms H Et OMe OMe COOEt Ms H	17
Et OMe OMe COOEt Ms H Et SMe OMe COOEt Ms H	H H
Et SMe OMe COOEt Ms H Et H OMe COOCH(CH ₂) ₂ MeS H	II. II
Et Me OMe COOEt Ms H Et C1 OMe COOEt Ms H Et CF3 OMe COOEt Ms H Et OMe OMe COOEt Ms H Et SMe OMe COOEt Ms H Et H OMe COOCH (CH3) 2 MeSO H Et H OMe COOCH (CH3) 2 MeSO H Et H OME COOCH (CH3) 2 Ms	II.
Et H OMe $COOCH(CH_3)_2$ Ms H	II.
Et H OMe $COOCH(CH_3)_2$ Ms H Et H OMe $COOCH(CH_3)_2$ Ms Q7 Et H OMe $COOCH(CH_3)_2$ Ms Q12 Et H OMe $COOCH(CH_3)_2$ Ms Q9 Et H OMe $COOCH(CH_3)_2$ Ms Q9 Et H OMe $COOCH(CH_3)_2$ Ms Q4	9 7
Et H OMe COOCH (CH ₂) 2 Ms Q12	Q12
Et H OMe COOCH (CH ₃) 2 Ms Q9	gg
Et H OMe COOCH (CH ₃) 2 Ms Q4	04
Et H ONe $COOCH(CH_2)_2$ Ms Q5	<u> 95</u>
Et H OMe $COOCH(CH_2)_2$ Ms Q6	
	917
Et C1 One $COOCH(CH_3)_2$ Ms H	H :
- Et CF_3 OMe $COOCH(CH_3)_2$ Ms H	H
Et OMe OMe COOCH(CH ₂) ₂ Ms H	H

	A	В	Х	Y	Z	ę.
5	Et	SMe	0Me	COOCH (CH ₃) ₂	W_	
	Et		OMe	COOMe	Ms Cl	H
	Et	H H H H H	OMe	COOMe		n O7
	Et	11 17	OMe	COOMe	CI	ΩI
10	Et	H TT	OMe	COOME	C1	Q2
	Et	. n	0Me	COORE	C1	ëЗ
	Et	u .	one OMe	COOEt	C1	H Q1
	Et	17	OMe		C1	#T
	Et	T.	OMe	COOEt	CI	Q2
15	Et	д. П	One OMe	COOCU(CU)	C1	g 3
	Et	1. 1.		COOCH (CH ₃) z	C1	H
	Et	Д 17	OMe	COOCH (CH ₃) ₂	CI	Q1
	Et	Д U	OMe	COOCH (CH ₃) ₂	C1	92
		Д 17	0Me	COOCH (CH ₂) ₂	C1	Q 3
20	Et	п.	0Me	CON (CH ₃) ₂	MeS	Ħ
	Et	n ~	0Me	CON (CH ₃) ₂	MeS0	H H H
	Et	нининининининини	0Me	CON (CH ₃) ₂ CON (CH ₃) ₂	Ms	
	Et	Ħ	0Me	CON (CH ₃) ₂	Ms	Q1
25	Et	Ħ	0Me	CON (CH ₂) ₂ CON (CH ₂) ₂ CON (CH ₂) ₂	Ms	018
	Et	Ħ	0Me	CON (CH ₃) ₂	Ms	913
	Et	Ħ H	0Me	CON (CH ₂) ₂	Ms	Q4
	Et Et	H	0Me	CON (CH ₂) ₂	Ms	9 5
	Et.	H	0Me	z (EHO) NOO	Ms	96
30	Et		· OMe	CON (CH ₃) ₂	Ms	922
	Et	Me	0Me	CON (CH ₃) ₂	Ms	H -
	Et	C1	0Me	CON (CH ₃) ₂	Ms	H
	Et	CF ₃	0Me	CON (CH ₂) ₂	Ms	H
	Et	0Me	0Me	CON (CH ₃) ₂	Ms	H
35	Et	SMe	0Me	CON (CH ₃) ₂	Ms	H H H H
	Et	Ħ	0Me	CON (CH ₃) ₂	C1	
	Et	H	0Me	CON (CH ₃) z	Cl	Q1
	Et	H	0Me	CON (CH ₃) ₂	CI	Q2
40 .	Et	H	0Me	CON (CH ₃) ₂	C1	Q3
₩.	Et	Ħ	0Me	COOC ₄ H ₉	2K	H
	Et	H	0Me	COOC_H.	CI	
	Et	Ħ	0Me	COOCH ₂ CH (CH ₂) ₂	Ms	H
	Et	H	0Me	COOCH ₂ CH (CH ₃) ₂	Cl	H
45	Et	Ħ	0Me	COOCH (CH ₃) C ₂ H ₅	Ms [.]	H
	Et	H	0Me	COOCH (CH ₃) C ₂ H ₅	Cl	H
	Et	Ħ	OMe	C00C (CH ₃) 3	Ms	H
	Et	H	0Me	C00C (CH ²) ²	C1	H

55

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5	<u>A</u>	B	X	Y	Z	Q
	Et	H	0Me	CONHMe	Ms	Ħ
	Et	H H H	0Me	CONHMe	CI	ннининининининининининининининининининин
	Et Et Et	H	0Me	CONHEt	Ms	Ħ
	Et	. H	0Me	CONHEt	CI	Ħ
10	Et	H	0Me	CONHCH (CH ₃) ₂	Ms	H
	Et	H	0Me	CONHCH (CH ₃) ₂	Cl	H
	Et	. H	0Me	CONHC (CH ₃) 3	Ms	H
	Et Et Et	H	0Me	CONHC (CH ₃) ₃	Cl	H
15	Εŧ	H	0Me	CONHC₄H₃	Иs	H
	Et	H	0Me	CONHC₄H₄	CI	H
	Et	<u>H</u>	0Me	CONHCH 2CH (CH3) 2	Ms	H
	Et	H	0Me	CONHCH ₂ CH (CH ₃) ₂	CI	H
	Et	Ħ	0Me	CONHCH (CH ₃) C ₂ H ₅	Ms .	<u>H</u>
20	Et	H H H H H	0Me	CONHCH (CH3) C2H5	CI	H
	Et	Ħ	0Me	CONEtz	Ms	H
	Et	H	0Me	CONEtz	CI	H
	Et	H	OMe	CON (CH(CH ₃) ₂) ₂	Ms	H
25	Et Et	H	OMe	CON (CH(CH ₃) ₂) ₂	C1	. H
	Et	H	OMe OMe	YI YI	Ms Cl	n T
	Et	H	One OMe	NO II	Ms	<u> </u>
	Et	H	one OMe	Y2 Y2 Y3	C1	n. U
	Et	Ħ	0Me	A3 17	Ms	11 17
30	Et	Ħ	OMe	Y3	C1	H II
	Et	Ħ	0Me	COOPh	Ms	Ħ
	Et	Ħ	0Me	COOPh	C1	Ħ
	Et	H .	0Me	COOCH ₂ Ph	Ms	H
35	Et	H	0Me	COOCHzPh	CI	H.
	Et	H	0Me	COOCH ₂ CH=CH ₂	Ms	H.
	-Et	H	0Me	COOCH ₂ CH=CH ₂	C1	H
	Et	H	0Me	$COOCH_2C \equiv CH$	zří	H.
40	Et	H	0Me	$COOCH_2C = CH$	CI	H
40	Et	H	0Me	C (0) SMe	Ms	H
	Et	H	0Me	C (0) SMe	CI	H
	Et	H	0Me	C (0) SE t	Ms	<u>H</u>
	Et	H	0Me	C(0)SEt	C1	H. H H
45	Et	H	0Me	C (O) SCH (CH ₃) z	Ms	H
	Et	H	0Me	$C(0)$ SCH $(CH_3)_z$	C1	H.
	Et	Ħ	0Me	C (0) SC ₃ H ₇	Ms	H
	Et	H	. OMe	C (0) SC3H7	CI	H

	A	В	Х	Y	Z	Q.
5	Et	H	0Me	C (S) 0Me	Ms	
	Et	Ħ	0Me	C (S) OMe	CI	II.
	Et	Ħ	One One	C(S) OEt) ZK	n. H
	Et	H	OMe	C(S) 0Et	CI	17
10	Et	Ħ	0Me	C (3) 0D2 C (S) 0CH (CH ₃) ₂	Ms	17. TT
	Et	Ħ	0Me	C(S)OCH(CH ₂) _z	CI	II.
	Et	H	OMe	C (S) SC ₃ H ₇) ZK	Ω. U
	Et	. <u>п</u>	0Me	C(3)303H7	CI	<u>п</u>
	Et	H · ·	0Me	C (S) SMe	Ms	n n
15	Et	H	0Me	C (S) SMe	CI	H H
	Et	H H	0Me	C(S)SEt	Иs	Ħ
	Et	Ħ	0Me	C(S)SEt	C1	Ħ
	Et	Ħ	0Me	C(S)SCH(CH ₃) ₂	Ms	ਜ
20	Et	Ħ	0Me	C(S) SCH(CH ₃) ₂	ČĨ	Ħ
	Et	H ·	0Me	C(S) SGR(GR3) 2	Ms	Ħ
	Et	H.	0Me	C(S) SC ₂ H ₇	C1	Ħ
	Et	· Ħ	Br	COOMe	Ms	Ħ
	Et	H H H	Br	COOMe	C1	нинининининининининининининининини
25	Et	Ħ	Br	COOEt	Ms	Ħ
	Et	Ĥ	Br	COOEt	CI	Ħ
	Et	Ħ	Br	COOCH (CH ₂) ₂	Ms	Ħ
	Et	Ħ	Br	COOCH (CH ₃) z	C1	H
30	Et	H H H	Br	CON (CH ₃) z	Ms	H
30	Et	H	Br	CON (CH ₃) ₂	Cl	H
	Et	H	Br	CONHMe	ak	H
	Et	H	Br	CONHE t	Ms	H
	Εt	H	Br	CONHC ₃ H ₇	Ms	Ħ
35	Et	H	Br	CONHCH (CH ₃) z	Ms	H
	Et	H	Br	CONHC (CH ₃) ₃	Ms	H
	Æt	H	Br	CONEtz	Ms	H
	Et	H	Br	CONHC (CH ₃) ₃	Ms	H
40	Et	H	Br	CONHC 4H 4	Жs	H
40	Et	H	Br	CONHC 4H 4	ys	H
	Et	H	Br	CON (CH (CH ₃) ₂) ₂	Ms	
	Et	H	Вr	<u> </u>	Ms .	n u
	Et	H	Br	Y2	ils V	11 11
45	Et	H	ğr	COOPH	Ms .	H H H
	Et	H	Br	COOCH 2Ph	Ms Ma	H
	Et	H	Br R-	COOCH zCH=CH z	iis Iis	H
	Et	H	Br	COOCH ₂ C≡CH	112	u

5	<u>A</u>	В	X	Y	Z	Q
J	Et	H	0Et	C00Me	Ms	Ħ
	Et	H	0Et	C00Me	C1	Ħ
	Et	H	OEt	COOEt	Ms	Ħ
	Et	H	0Et	COOEt	CI	Ä
10	Et	H	0Et	COOCH (CH ₃) ₂	Ms	ਜ
	Et	H	0Et	COOCH (CH ₃) z	CI	ਸ਼ੌ
	Et	H H	0Et	CON (CH ₃) ₂	Ms	Ħ
	Et	H	0Et	. CON (CH ₃) z	C1	H .
15	Et	H	OEt	CONHMe	Ms	Ħ
,,	Et	H H	0Et	CONHE t	Ms	Ħ.
	Et	H	0Et	CONHC ₃ H ₇	Ms	Ħ
	Et	H	OEt	CONHCH (CH ₃) ₂	Ms	Ħ:
	Et	H	0Et	CONHC (CH ₃) ₃	Ms	<u>H</u> -
20	Et	H	OEt	CONEtz	Ms	H
	Et	H	0E t	CONHC (CH ₃) ₃	. Ms	H
	Et	H	0E t	CONHC 4H -	Ms	H
	Et	H H H H	0Et	CONHC ₄ H ₉	Ms	ннинининининининини
	Et	H	OEt	CON (CH(CH ₃) ₂) ₂	Ms	H
25	Et	H	. OEt	YI	Ms	H
	Et	H	0E t	Y2	Ms	H
	Et	H	0E t	COOPh	Ms	H
	Et	H	· OEt	COOCH ₂ Ph	Ms	H
30	Et	H	0E t	COOCH ₂ CH=CH ₂	Мs	H
	Et	H H	0Et	COOCH _z C≡CH	Ms	H
	Et	Ħ	OCH (CH ₃) ₂	COOMe	Ms	H H H H H H H H H H
	Et	H	OCH (CH ₃) ₂	COOMe	C1	H
	Et	H	OCH (CH ₃) ₂	COOEt	Ms	H - ;
35	Et	H	OCH (CH ₃) ₂	COOE ±	C1	H.
	Et	H	OCH (CH ₃) ₂	COOCH (CH ₃) 2	Ms	H
	Et	H	OCH (CH ₃) ₂	COOCH (CH ₃) ₂	C1	H.
	Et	H	OCH (CH ₃) ₂	CON (CH ₃) z	Ms	H
40	Et	H	OCH (CH ₃) ₂	CON (CH ₃) z	C1	H
	Et	H	OCH (CH ₃) ₂	CONHMe	Ms	H ·
	Et	H	OCH (CH ₃) ₂	CONHEt	Ms	H
	Et	H	OCH (CH ₃) ₂	CONHC 3H 7	Ms	<u>H</u> -
	Et	H	OCH (CH ₃) ₂	CONHCH (CH ₃) ₂	Ms	H
45	Et	H	OCH (CH ₃) ₂	CONHC (CH ₃) ₃	Ms	H H
	Et	H	OCH (CH ₃) ₂	CONEtz	Ms	H '
	Et	H	OCH (CH ₂) ₂	CONHC (CH ₃) ₃	Ms	H -
_	Et	H	OCH (CH ₃) _z	CONHC.H.	Ms	H

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_	A	В	Х	Y	Z	Q
5	Et	H	OCH (CH ₃) 2	CONHC4H4	Ms	нннннннннннннннннннннннннннн
	Et	. Ā	OCH (CH ₃) ₂	CON (CH(CH ₃) ₂) ₂	Ms	H
	Et	H	OCH (CH ₃) ₂	Υl	Ms	H
10	Et	H	OCH (CH ₃) ₂	¥2	Ms	Ħ
10	Et	H	OCH (CH ₃) ₂	СООРЬ	Ms	H
	Et	H	OCH (CH ₃) z	COOCH ₂ Ph	Ms	H
	Et	Ħ	OCH (CH ₃) ₂	COOCH zCH=CH z	Ms	H
	Et	H	OCH (CH ₃) ₂	COOCH ₂ C≡CH	Ms	H
15	Et	H	CH20CH3	CO0Me	Ms	H
	Et	H	CH2OCH3	COOMe	C1	Ħ
	Et	H	CH2OCH3	COOEt	Ms	H
	Et	H H	CH 20CH 3	- COOEt	CI	H
	Et	H	CH2OCH3	COOCH (CH ₃) ₂	Ms	H
20	Et	H- H H	CH ₂ OCH ₃	COOCH (CH ₃) ₂	C1	H
	Et	H	CH ₂ OCH ₂	CON (CH ₃) ₂	Ms	H
	Et	H	CH2OCH2	CON (CH ₃) ₂	. CI	H
	Et	H	CH2OCH3	CONHMe	Ms	H .
	Et	H	CH2OCH3	CONHEt	Ms	H
25	Et	H	CH2OCH3	CONHC ₃ H ₇	Ms	H
	Et	H	CH ₂ OCH ₃	CONHCH (CH ₃) _z	Ms	H
	Et	H	CH2OCH3	CONHC (CH ₃) ₃	Ms	H
	Et	H	CH2OCH3	CONEtz	Ms	H
- 30	Et	H	CH2OCH3	CONHC (CH ₃) ₃	Ms	H
- 50	Et	H	CH ₂ OCH ₃	CONHC 4H 4	Ms	H
	Et	H	CH ₂ OCH ₃	CONHC ₄ H ₉	Ms	H ·
	Et	H	CH2OCH3	CON (CH(CH ₃) ₂) ₂	Ms	· H
	Et	H	CH ₂ OCH ₃	Y1	Ms	H
35	Et	H	CH ₂ OCH ₃	Y2	Ms	H
	Et	H	CH2OCH3	COOPh	zĸ	H
	Ēt	H	CH _z OCH _z	COOCH _z Ph	Ms	H
	Et	H	CH 2OCH 3	COOCH 2CH=CH2	Ms	H
	Et	H	CH ₂ OCH ₃	COOCH _z C≡CH	Ms	H
40	i-Pr	H	CI	CO0Me	MeS	H
	i-Pr	H	C1	COOMe	MeSO	H
	i-Pr	H	CĪ	CO0Me	Ms	H
	i-Pr	Ħ	ĊÌ	COOMe	Ms	Q1
45	i-Pr	Ĥ.	ČĪ	COOMe .	Ms .	Q2
₩.	i-Pr	Ħ	Cl	COOMe	Ms	Q3
	i-Pr	Ĥ	CI	COOMe	Ms	94
	i-Pr	Ħ	ĊÌ	COOMe	Ms	95
						

£	A	В	X	Y	Z	Q,
5	i-Pr	H H	Cl	C00Me	Ms	96
	i-Pr		Cl	COOMe	Ms	920
	i-Pr	Me C1	CI	COOMe	Ms	H H H H H H H
10	i-Pr i-Pr	C1 CF ₃	CI	COOMe COOMe	Ms Ms	<u>п</u>
		OMe	Cl Cl	COOMe	ris Ms	<u>n</u>
	i-Pr i-Pr	SMe	CI	COOMe	ns Ms	II II
	i-Pr		C1	COOEt	MeS	Ħ
15	i-Pr	Ħ	CI	COOEt	MeSO	Ħ
,,	i-Pr	Ħ	ČĪ	COOEt	Ms	Ħ
	i-Pr	Ĥ	CI	COOEt	Ms	Q1
	i-Pr	H	CI	COOEt.	Ms	9 18
	i-Pr	H	Cl	COOEt_	Ms	Q13
20	i-Pr	H	C1	COOEt	Ms	04
	i-Pr	H H H H H H H H H H H	CI	COOEt	Ms	95
	i-Pr	H	CI	COOEt	Ms	96
	i-Pr		CI	COOEt	Ms	922
25	i-Pr i-Pr	Me C1	C1 C1	COOEt	Ms · Ms	H H H H H H
	i-Pr	CF ₃	C1	COOEt	Ms	H
	i-Pr	OMe	CI	COOEt	. Ms	Ħ
	i-Pr	SMe	CI	COOEt	Ms	Ħ
30	i-Pr		· Cī	COOCH (CH ₃) ₂	MeS	Ħ
	i-Pr	H	Cl	COOCH (CH ₃) ₂	MeS0	H .
	i-Pr	H.	Cl	COOCH (CH ₃) ₂	Ms	H_
	i-Pr	H	CI	COOCH (CH ₃) ₂	Ms	97
	i-Pr	H	Cl	COOCH (CH ₃) ₂	Ms	Q12
35	i-Pr	Ħ	C1	COOCH (CH ₃) ₂	Ms	QQ
	i-Pr	H H H H H H H H	CI	COOCH (CH ₃) ₂	Ms M-	<u>94</u> 95
	i-Pr	H	CI	COOCH (CH ₃) ₂ COOCH (CH ₃) ₂	Ms Ms	06 #2
	i-Pr i-Pr	<u>п</u>	C1 C1	COOCH (CH ₃) ₂	Ms	96 917
40	i-Pr	Мe	CI	COOCH (CH ₃) ₂	Ms	Ħ.
	i-Pr	Cl	Cl	COOCH (CH ₃) 2	Ms	H H
	i-Pr	CF ₃	Cl	C00CH (CH ₃) 2	Ms	
	i-Pr	0Me	ČÌ	COOCH (CH ₃) ₂	Ms	H H . H H
45	i-Pr	SMe	CI	COOCH (CH ₃) _z	2M	. Н
	i-Pr	H	CI	COOMe	. C 1	
	i-Pr	H	C1	COOMe	CI	Q1
	i-Pr	H	C1	C00Me	C1	92

_	A	В	Х	Y	Z	Q
5	i-Pr	H	C1	COOMe	Cl	Q3
	i-Pr	H H H H H	CI	COOEt	CI	H
	i-Pr i-Pr	出	CI Cl	COOEt COOEt	C1	Q1 Q2
10	i-Pr	H	CÎ	COOEt	CI Cl	93
	i-Pr	Ħ	C1	COOCH (CH ₃) ₂	CI -	H
	i-Pr	Ħ	C1	COOCH (CH ₃) ₂	C1	H Q1
	i-Pr i-Pr	H H H	C1 C1	COOCH (CH ₃) ₂	C1	Q 2
15	i-Pr	H	C1	COOCH (CH ₃) _z CON (CH ₃) _z	C1 MeS	93 H
	i-Pr	H	Cl	CON (CH ₃) z	MeSO	Н Н Н Q1
	i-Pr	Ħ	CI	CON (CH ₃) ₂	Ms	H
	i-Pr i-Pr	H	C1 C1	CON (CH ₃) ₂	. Ms	<u>Q]</u>
20	i-Pr	Ħ	CI	CON (CH ₃) z CON (CH ₃) z	Ms Ms	918 913
	i-Pr	H	Cl	CON (CH ₃) ₂	Ns .	Q4
	i-Pr	H H H H H	CI	CON (CH ₃) z	Ms	95
25	i-Pr i-Pr	H	CI CI	CON (CH ₂) _z	Ms V-	96 922
	i-Pr	Me	C1	CON (CH ₃) ₂ CON (CH ₃) ₂	Ms Ms	
	i-Pr	Cl	Cl	CON (CH ₃) _z	Ms	Ħ
	i-Pr	CF ₃	CI	CON (CH ₃) ₂	Ms	H H H
30	i-Pr i-Pr	0Me SMe	. Cl Cl	CON (CH ₃) ₂ CON (CH ₃) ₂	Ms Ma	H
	i-Pr		G1	CON (CH ₃) _z	Ms Cl	H H
	i-Pr	H H H H	Cl	CON (CH ₃) ₂	CI	· Q 1
	i-Pr	H	Cl	CON (CH ₃) ₂	C1	92
35	i-Pr i-Pr	n H	Cl Cl	CON (CH ₃) ₂ COOC ₄ H ₉	C1 Ms	93
	i-Pr	H	C1	C00C4H4	CI	H H H
	i-Pr	H H H	Cl	COOCH zCH (CH3) z	Ms	H
40	i-Pr	H	CI	COOCH 2CH (CH ₂) 2	Ç1	H
	i-Pr i-P r	n H	Cl Cl	COOCH (CH ₃) C ₂ H ₅ COOCH (CH ₃) C ₂ H ₅	Ms CI	n H
	i-Pr		CI	COOC (CH ₃) 2	Ms	
	i-Pr	H H H	C1	COOC (CH ₃) ₃	CI	H H H H
45	i-Pr i-Pr		CI	CONHMe	Ms C1	H
	i-Pr	H H	CI CI	CONHMe CONHE t	C1 Ms	n H
	i-Pr	H .	C1	CONHEt	Cl	Ħ

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5	A	В	Х	Υ	Z	Q
5	i-Pr i-Pr	H	C1 C1	CONHICH (CH ₃) ₂	Ms	H
10	i-Pr i-Pr i-Pr i-Pr	H H H H	CI CI CI CI	CONHCH (CH ₃) ₂ CONHC (CH ₃) ₃ CONHC (CH ₃) ₃ CONHC ₄ H ₉ CONHC ₄ H ₉	C1 Ms C1 Ms C1	H H H
15	i-Pr i-Pr i-Pr i-Pr i-Pr	H H H H H H	C1 C1 C1 C1	CONHCH ₂ CH (CH ₃) ₂ CONHCH ₂ CH (CH ₃) ₂ CONHCH (CH ₃) C ₂ H ₅ CONHCH (CH ₃) C ₂ H ₅	Ms CI Ms C1	нннннннннн
20	i-Pr i-Pr i-Pr i-Pr	H H H H	C1 C1 C1 C1 C1	CONEtz CONEtz CON (CH(CH ₂) ₂) ₂ CON (CH(CH ₃) ₂) ₂ Y1	Ms C1 Ms C1 Ms	H H H H
25	i-Pr i-Pr i-Pr i-Pr i-Pr	H H H H	C1 C1 C1 C1	YI Y2 Y2 Y3 Y3	CI Ms CI Ms CI	H H H H H
30	i-Pr i-Pr i-Pr i-Pr i-Pr	Н Н Н	C1 C1 C1 C1 C1	COOPh COOPh COOCH2Ph COOCH2Ph COOCH2CH=CH2	Ms CI Ms C1 Ms	д Н Н Н Н
35	i-Pr i-Pr i-Pr i-Pr i-Pr	H H H H	CI CI CI CI CI	$COOCH_2CH=CH_2$ $COOCH_2C=CH$ $COOCH_2C=CH$ $C(0)SMe$	CI Ms C1 Ms	H H H
40	i-Pr i-Pr i-Pr i-Pr	Н Н Н Н	C1 C1 C1 C1	C (0) SMe C (0) SEt C (0) SEt C (0) SCH (CH ₃) ₂ C (0) SCH (CH ₃) ₂	C1 Ms C1 Ms C1	H H H H
45	i-Pr i-Pr i-Pr i-Pr i-Pr	H H H H	C1 C1 C1 C1	C(0) SC ₃ H ₇ C(0) SC ₃ H ₇ C(S) OMe C(S) OMe C(S) OE t	Ms C1 Ms CI Ms	H H H H
	i-Pr	H	<u>ci</u>	C(S) OE t	CI	H

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5	A	В	X	Y	Z	ę,
	i-Pr	H	Cl	C(S)OCH(CH ₃) _z	Ms	Ħ
	i-Pr		C1	C(S)OCH(CH ₃) ₂	C1	
	i-Pr	H	CI	C(S)SC ₃ H ₇	Ms	Ħ.
10	i-Pr	H	C1	C(S)SC ₃ H ₇	C1	H
10	i-Pr	H	C1	C(S)SMe	Иs	H
	i-Pr	H	CI	C(S)SMe	C1	H
	i-Pr	H	C1	. C(S) SEt	Ms	H
	i-Pr	H	C1	C(S) SEt	Cl	H
15	i-Pr	Ħ	C1	C(S)SCH(CH ₃) ₂	Ms	H
	i-Pr	H	C1	C(S) SCH(CH ₃) ₂	C1	H
	i-Pr	H	Cl	C(S)SC ₃ H ₇	Ms	H
	i-Pr	H	C1	C(S)SC ₃ H ₇	C1	H
	i-Pr	H	Иe	C00He	MeS	Ħ
20	i-Pr	Ħ	Йe	C00Me	MeS0	H
	i-Pr	H	Ме	COOMe	Ms	H
	i-Pr	H	Йe	COOMe	Ms	Q1
	i-Pr	H	Me -	COOMe	Ms	92
25	i-Pr	Ħ	Ме	COOMe	Ms	93
	i-Pr	H	Мe	C00Me	Ms	04
	i-Pr	. <u>H</u>	Ме	C00Me	Ms.	95
	i-Pr	H	Йe	COOMe	Ms	96
	i-Pr		Me .	COOMe	Ms	920
30	i-Pr	Ме	Me	COOMe	Ms	н
	i-Pr	C1	. Me	COOMe	Ms	H
	i-Pr	CF ₃	Мe	COOMe	Ms.	Ħ
	i-Pr i-Pr	OMe	Me M-	COOMe	Ms	<u> </u>
35	i-Pr	SMe	Me Me	COOMe COOE t	Ms MeS	n u
	i-Pr	Н Н Н Н Н	ne Me	COOEt	MeSO	H H H H H
	i=Pr	n n	ne Me	COOEt	Ms	TT III
	i-Pr	u u	ne Me	COOEt	Ms	äı
	i-Pr	n	Ме	COOEt	an an	Q18
40	i-Pr	H II	Me	COOE	Ms	Q13
	i-Pr	Ħ	Me	COOEt	Ms	04
	i-Pr	H	Ме	COOEt	Ms	95
	i-P r	Ħ	Me	COOEt	Ms	96
45	i-Pr	Ħ	Me	·COOEt	Ms	922
~	i-Pr	Мe	Ме	COOEt	Ms	H
	i-Pr	CI	Me	COOEt	ZM ZM	Ħ
	i-Pr	CF ₃	Me	COOEt	zM	Ħ
		4. 3			• ~•	

5	<u>A</u>	В	X	Y	\overline{z}	Q
	i-Pr	0Me	Мe	COOEt	Ms	и
	i-Pr	SMe	Me	COOEt	Ms	Н Н Н Н О7
	i-Pr	H H	Me	COOCH (CH ₃) ₂	MeS	П 17
	i-Pr	H	Me	COOCH (CH ₃) ₂		H
10	i-Pr	H	Me	COOCH (CH ₃) ₂	MeS0	Ħ
	i-Pr	Ħ	Me	COOCH (CH3) 2	Ms	H
	i-Pr	H		COOCH (CH ₃) ₂	Ms	97
	i-Pr	H	Me	COOCH (CH ₃) z	Ms	912
	1-11	Д	Ме	COOCH (CH ₃) ₂	Ms	93
15	i-Pr	Ħ	Иe	COOCH (CH ₂) _z	Ms	. 04
	i-Pr	H	Me	COOCH (CH ₃) ₂	Ms	95
	i-Pr	H	Иe	COOCH (CH ₃) z	Ms	40
	i-Pr	H	Иe	COOCH (CH ₃) ₂		96
	i-Pr	Мe	Иe	COOCH (CH3) 2	Ms	Q17
20	i-Pr	CI		COOCH (CH ₃) ₂	Ms	\mathbf{H}_{-}
	i-Pr		Йe	COOCH (CH ₃) ₂	Ms	H
		CF₃	Ме	COOCH (CH ₃) ₂	Ms	Ħ
	i-Pr	0Me	Ме	COOCH (CH ₃) ₂	Ms-	H H H
	i-Pr	SMe	lle	COOCH (CH ₃) z	Ms	H
25	i-Pr	H H H H	Иe	COOMe	C1	H
:5	i-Pr	H	Иe	COOMe		П 07
	i-Pr	H	Me	COOMe	CI	QÍ
	i-Pr	й	Ме		CI	92
	i-Pr	ii ii		COOMe	CI	23
	i-Pr	. 11	Йe	COOE t	C1	H
10	: 7-	<u> </u>	Me	COOE t	C1	QI
	i-Pr	T T	Ме	COOEt	CI -	92
	i-Pr	H H H	Me	COOEt	CI	Q3
	i-Pr	H	Ме	COOCH (CH ₃) _z	ČÌ	H
	i-Pr	H	Ме	COOCH (CH ₃) 2	CI	
5	i-Pr	Ħ	Ме	COOCH (CH ₃) _z		Q1
	i-Pr	H H	Me	COOCH (CH 2) Z	CI	92
	i-Pr	Ħ		COOCH (CH ₃) ₂	CI	93
	i-Pr	H	Ме	CON (CH ₃) ₂	MeS	H
	: D-	П	Me	CON (CH ₃) ₂	MeSO	H H H
0	i-Pr	H	Ме	CON (CH ₃) _z	Ms	H
	i-Pr	H	Me	CON (CH ₃) _z	Ms	Ql
	i-Pr	H	Мe	CON (CH ₃) _z	Ms	<u> 9</u> 18
	i-Pr	H	Me	CON (CH ₃) ₂	Ms	
	i-Pr	H	Ме	CUN (CA /		Q13
5	i-Pr	Ĥ	Me	CON (CH ₃) ₂	Ms	94
9	i-Pr			CON (CH ₃) ₂	Ms	Q 5 -
	i-Pr	H	Me ·	CON (CH ₃) z	Ms	96
		H	Me	CON (CH ₃) z	Ms	922
	i-Pr	Иe	Me	CON (CH ₃) ₂	Ms	H

0 282 944

	·					
5	A	В	X	Y	Z	Q.
5	i-Pr	C1	Иe	CON (CH ₃) z	Ms	tr
	i-Pr	CF₃	Me	con (CH ₃) z		H
	i-Pr	OMe	Йe	CON (CH ₃) ₂	Ms	H H H
	i-Pr	SMe	ne Ne		Ms	Ħ
10	i-Pr	2116		CON (CH ₂) ₂	Ms	H
		Ħ	Me	CON (CH ₃) ₂	C1	H
	i-Pr	H H H	Me	CON (CH ₃) ₂	C1	Q1
	i-Pr	H	lie	CON (CH ₃) ₂	Cl	92
	i-Pr	H	Иe	CON (CH ₃) ₂	CI	<u> </u>
15	i-Pr	H	Ме	COOC 4H,	Ms	Ħ
15	i-Pr	H	Иe	COOC_H,	Cl	11
	i-Pr	Ħ	Me	COOCH ₂ CH(CH ₃) ₂		Д
	i-Pr	ਸ਼	Me	COOCH CH (CH3) 2	Ms	<u>n</u>
	i-Pr	H	ne Me	COOCH CH (CH ₃) 2	C1	H
	i-Pr	<u>ц</u> П		COOCH (CH3) C2H5	Ms	H
20	i-Pr	H	Ме	COOCH (CH3) C2H5	CI	H .
		щ.	Me	COOC (CH ₃) 3	Ms	H ·
	i-Pr	. Н	Me	COOC (CH ₃) ₃	C1	Ħ
	i-Pr	. Н	Йe	CONHMe	Ms	ਸ
	i-Pr	Ħ	Иe	CONHMe	Ċ1	H H H H H H H H
25	i-Pr	H	Нe	CONHEt	Ms	Ħ
	i-Pr	H H H H H	Йe	CONHE t	CI	H
	i-P r	H	Йe	CONHCH (CH ₃) ₂		п
	i-Pr	Ħ	Ме	CONHCH (CH ₃) ₂	Ms	H
	i-Pr	Ħ	Ме	CONHC (CH ₃) ₃	Ç1	H
30	i-Pr	Ħ	. Me	CONHC (CH ₃) ₃	Ms	Ħ
	i-Pr	ü	Me	COMO N	CI	Ħ
	i-Pr	H H H		CONHC 4H.	Ms	H
	i-Pr	П.	Ме	CONHC 4H •	C1	Ħ
		H	lle	CONHCH _z CH (CH ₃) _z	Ms	H
35	i-Pr	H	Ме	CONHCH2CH (CH3) 2	C1	H .
	i-Pr	Ħ	Иe	CONHCH (CH2) C2H5	Ms	H
	i-Pr	H	lie	CONHCH (CH ₃) C ₂ H ₅	C1	H
	i-Pr	H	Иe	CONE t ₂	Ms	H H H H H
	i-Pr	H	Иe	CONEtz	Ċ1	ਸ਼ੋ
40	i-Pr	H	Йe	רסאו (כעורכע ז ז	Ms	H .
	i-Pr	Ħ	Me	COM (CH/CH))	CI	H
	i-Pr		Иe			
	i - P-	Ħ	ne Me	Yl	Ms C	<u> </u>
	i-Pr i-Pr	H H H		YI	C1	H H H
45	i-Pr	n u	Me	Y2	Ms	H
	: D-	H	Me	<u> </u>	C1	H
	i-Pr	H	Ме	Y3	Ms .	H
	i-P r	H	Иe	Y3	CI	H

	A	 В	X	Y	Z	Q
5	i-Pr	17				
	i-Fr i-Pr	H	Me Me	COOPh COOPh	Ms	H H H H H
	i-Pr		Me	COOCH _z Ph	C1	H
	i-Pr	Ħ	Me	COOCH ₂ Ph	Ms C1	П 7
10	i-Pr	Ħ	Ме	COOCH ₂ CH=CH ₂	Ms	n u
	i-Pr	Ĥ	Ме	COOCH ₂ CH=CH ₂	CI.	<u>п</u>
	i-Pr	Ĥ	Ме	COOCH ₂ C≡CH	Ms	n H
	i-Pr	Ħ	Йe	COOCH 2C = CH	C1	11 11
15	i-Pr	Ĥ	Йe	C (0) SMe	Ms	H H H H H
	i-Pr	Ħ	Иe	C (0) SMe	CI	H.
	i-Pr	H	Me	C(0) SEt	Ms.	Ħ
	i-Pr	Ħ	Иe	C(0) SEt	CI	ਜ
	i-Pr	H	Йe	C (0) SCH (CH ₃) ₂	Ms	Ĥ
20	i-Pr	Ħ	Me	C(0) SCH(CH ₃) ₂	C1	Ħ ·
	i-Pr	H	Ме	C (0) SC ₂ H ₇	Ms	Ħ
	i-Pr	H	Me	C(0) SC ₃ H ₇	CI	Ĥ
	i-P r	H	lle .	C(S) OMe	Ms	H
25	i-Pr	H	lle ·	C(S)OMe	C1	<mark>Н</mark> Н
	i-Pr	Ħ	Иe	C(S)OEt	Ms	H
	i-Pr	H	Ме	C(S)OEt	CI	H
	i-Pr	· H	Иe	$C(S)OCH(CH_3)_z$	Ms	H
	i-Pr	<u>H</u> .	Me	C(S)OCH(CH ₃) ₂	C1	H
30	i-Pr	H	ile	C(S)SC3H7	Ms	H .
	i-Pr	H	Me	C(S)SC ₃ H ₇	C1	H · · ·
	i-Pr	Ħ	·ře	C(S) SMe	Ms	H H H
	i-Pr	H	Мe	C(S)SMe	C1	H
35	i-Pr	H	Ме	C(S)SEt	Ms	H H
	i-Pr	Ħ	Ме	C(S) SEt	C1	H
	i-Pr	Н	Ме	C(S)SCH(CH ₃) ₂	Ms .	H H H
	i-Pr i-Pr	H 17	Ме	C(S)SCH(CH ₃) ₂	Ç1	H
	i-rr i-Pr	<u>п</u> п	Me	C(S) SC ₃ H ₇	Ms	H
40	i-Pr	11	Me	C(S) SC ₃ H ₇	CI Y-C	H
	i-Fr	H	OMe	COOMe	MeS	H
		H	0Me	COOMe	MeS0	H
	i-Pr i-Pr	H	OMe	COOMe	Ms V-	H
45	i-Pr	H	OMe	COOMe	Ms ×-	QI 02
7-7	i-er i-Pr	H :	OMe	. COOMe	Ms ×-	Q2
	i-Pr	H	OMe	COOMe	ăs X-	Q3
	i-Pr	H H	OMe OMe	COOMe	Ms Ms	94 95
	T_LT_	п	0Me	C00Me	Ms	_ ₩0

5	A	В	Х	Y	Z	Q
	i-Pr	Ħ	0Me	COOMe	Ms	96
	i-Pr	H	0Me	C00Me	Ms	920
	i-Pr	Мe	0Me	C00Me	Ms	
10	i-Pr	CI	0Me	COOMe	Ms	H H H H H H H H
	i-Pr	CF₃	0Me	C00Me	Ms	n.
	i-Pr	OMe	· OMe	COOMe	Ms	11
	i-Pr	SMe	0Me	COOMe	Ms	11
	i-Pr	Ħ	OMe -	COOEt	ns MeS	<u>п</u>
15	i-Pr	H	0Me	COOEt		П
	i-Pr	Ħ	0Me	COOEt	MeS0	Д.
	i-Pr	й	0Me		Ms	ii.
	i-Pr	H H	0Me	COOEt)is	Q1
	i-Pr	II II	one OMe	COOEt	Ms	Q18
20	i_D-	14		COOEt) is	Q13
	i-Pr i-Pr	<u>п</u>	OMe	COOEt	Ms	Q4
	1-11	H H H	0Me	COOEt	Ms	95
	i-Pr i-Pr	H	0Me	COOEt.	Ms	96
	: n_		0Me	COOEt	Ms	922
25	i-Pr	Ме	0Me	C00Et	eli	H
	i-Pr	Cl	0Me	COOEt	Ms	H
	i-Pr	CF ₃	0Me	COOE±	e Ms	H H
	i-Pr	OMe	0Me	C00Et	Ms	• Н
٠	i-Pr	SMe	0Me	CO0Et	Ms	. H
30	i-Pr	Ħ	0Me	COOCH (CH ₃) ₂	MeS	H
	i-Pr	H H	0Me	COOCH (CH ₃) ₂	MeS0	Ħ
	i-Pr	Ħ	0Me	COOCH (CH ₃) _z	Ms	H
	i-Pr	H	0Me	COOCH (CH ₃) ₂	Ms	97
35	i-Pr	H	0Me	COOCH (CH ₃) ₂	Ms	012
55	i-Pr	H	0Me	COOCH (CH ₃) _z	Ms	<u>09</u>
	i-Pr	H	0Me	COOCH (CH ₃) ₂	Ms	Q4
	i-Pr	H	0Me	COOCH (CH ₂) _z	Ms	95
	i-Pr	H	OMe	COOCH (CH ₃) ₂	Ms	96
40	i-Pr	H	0Me	COOCH (CH ₃) ₂	Ms	Q17
	i-Pr	Me	0Me	COOCH (CH ₃) z	Ms	H
	i-Pr	CI	0Me	COOCH (CH ₃) ₂	Ms.	Ħ
	i-Pr	CF ₃	0Me	COOCH (CH ₃) _z	Жs	Ä
	i-Pr	0Me	0Me	COOCH (CH ₃) ₂	Ms	H
45	i-Pr	SMe	OMe	COOCH (CH ₃) ₂	Ms	H H
	i-Pr	H	0Me	COOMe	CI	Ħ
	i-Pr	Ħ	0Me	COOMe	CI CI	ü 1
	i-Pr	H	0Me	COOMe	C1	92
			J.76	COOLIE	GT.	4.
50						

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5	<u> </u>	B	X	Y	Z	Q
	i-Pr	H H H H	0He	COOMe	CI	Q3
	i-Pr	H	0Me	COOEt	ČI	H EJ
	i-Pr	H	0Me	COOEt	ČÌ	Q 1
10	i-Pr	H	0Me	COOEt	CI	92
10	i-Pr	H	0Me	COOEt	Ci	9 3
	i-Pr	H	0Me	COOCH (CH ₃) ₂	Či	H
	i-Pr	Н Н Н Н Н	0Me	COOCH (CH ₃) ₂	ČÌ	Ü1
	i-Pr	H	0Me	COOCH (CH ₃).z	Ci	92
15	i-Pr	H	0Me	COOCH (CH ₃) ₂	CÎ	<u>42</u>
	i-Pr	H	0Me	CON (CH ₃) ₂	MeS	n Eo
	i-Pr	H	OMe	CON (CH ₃) ₂	MeSO	H H
	i-Pr	· <u>H</u>	0Me	CON (CH ₃) z	Ms	H H H
	i-Pr	H H	0Me	CON (CH ₃) z	Ms	<u>ā</u> 1
20	i-Pr		0Me	CON (CH ₃) z	Ms	918
	i-Pr	H	OMe	CON (CH ₃) z	Ms	Q13
	i-Pr	H	OMe	CON (CH ₃) _z	Ms	94
	i-Pr	H H H	OMe	CON (CH ₃) ₂	Ms	25
25	i-Pr	H	OMe	CON (CH ₃) z	Ms	6 6
25	i-Pr		0Me	CON (CH ₃) ₂	Ms	Q 22
	i-Pr	Ме	OMe	CON (CH ₃) ₂	Ms	
	i-Pr	<u>C1</u>	0Me	CON (CH ₃) ₂	Ms	Ħ
	i-Pr	CF ₃	0Me	CON (CH ₃) ₂	Ms	Ħ
30	i-P r	OMe -	0Me	CON (CH ₂) ₂	Ms	Ħ
	i-Pr	SMe	OMe .	CON (CH ₃) ₂	Ms	H H H H H
	i-Pr	H	OMe	CON (CH ₃) ₂	CI	Ĥ
	i-Pr	H	0Me	CON (CH ₃) ₂	CI	٩1
	i-Pr	H	0Me	CON (CH ₃) ₂	CI .	92
35	i-P r	H	0Me	CON (CH ₃) z	C1	92 93
	i-Pr	H H H H	0Me	COOC ₄ H ₉	Ms	H
	i≃P⊤	H	0Me	COOC₄H₊	CI	H H H H
	i-Pr	H	OMe	COOCH ₂ CH (CH ₃) _z	Ms	Ĥ
40	i-Pr	H	0Me	COOCH ₂ CH (CH ₃) ₂	CI	H
	i-Pr	H	0Me	COOCH (CH3) C2H5	Ms	H
	i-Pr	H	0Me	COOCH (CH ₃) C ₂ H ₅	CI	Ħ
	i-P -	H .	0Me	COOC (CH ₃) ₃	Ms	Н
	i-Pr	H	0Me	$COOC(CH_3)_3$	CI	H H
45	i-Pr	· H	0Me	CONHMe	Ms	H
	i-Pr	H	0Me	CONHMe	C1	H H
	i-Pr	H	0Me	CONHEt	Ms	H
	i-Pr	H	0Me	CONHEt	CI	H H

	A	В	Х	Y	Z	Q
5	i-Pr	H	0Me	CONHCH (CH ₃) ₂	Ms	
	i-Pr	Ħ	0Me	CONECH (CH ₃) ₂	C1	H
	i-Pr	H H H H H	0Me	CONHC (CH ₃) 3	Ms	ннинниннин
	i-Pr	Ħ	0Me	CONEC (CH ₃) 3	CI	<u>n</u>
10	i-Pr	Ĥ	OMe	CONHC4H4	Ms	n n
	i-Pr	Ħ	0Me	CONHC 4H •	CI	Ħ
	i-Pr	H	0Me	CONHCH ₂ CH (CH ₃) ₂	Ms.	Ħ
	i-Pr	H	OMe	CONHCH 2CH (CH3) z	CI	Ħ
	i-Pr	H	0Me	CONHCH (CH3) C2H5	Ms	Ħ
15	i-Pr	H	0Me	CONHCH (CH3) C2H5	ČĪ	Ħ ·
•	i-Pr	H	0Me	CONE tz	Ms	អ៊ី
	i-Pr	H	0Me	CONEtz	· CI	Ħ
	i-Pr	H	0Me	CON (CH(CH ₃) _z) _z	Ms	Ħ
20	i-Pr	H	0Me	CON (CH(CH ₃) _z) _z	CI	Ħ
	i-Pr	H	0Me	¥1	Ms	Ħ
	i-Pr	H	0Me	YI Y2 Y2	C1	H
	i-Pr	H	0Me	Y2	Ms	Ħ
	i-Pr	H	0Me	Y2	CI	H
25	i-Pr	H	0Me	Y3	Ms	H
	i-Pr	ннининниннин	0Me	Y3	CI	H H H H
	i-Pr	H	0Me	COOPh	2K	H
	i-Pr	H	0Me	COOPh	CI	H H
30	i-Pr	Ħ	0Me	COOCH _z Ph	Ms	H
-	i-Pr	H	0Me	COOCH ₂ Ph	C1	H
	i-Pr	H	0Me	COOCH _z CH=CH _z	Ms	H
	i-Pr	H	0Me	COOCH _z CH=CH _z	CI	H
	i-Pr	H	0Me	COOCH ₂ C≡CH	Ms	H H H
35	i-Pr	H	0%e	$COOCH_2C = CH$	CI	H
	i-Pr	H	0Me	C(0) SMe	Ms	Ħ
	i-Pr	H	0Me	C(0) SNe	C1	H H H H
	i-Pr	H	OMe	C(0) SEt	Ms	H
40	i-Pr	H	0Me	C(0) SEt	C1	H
70	i-Pr	H	0Me	C(0) SCH(CH ₃) ₂	Ms	H
	i-Pr	Ħ	OMe	C(0) SCH(CH ₃) ₂	C1	H
	i-Pr	H H	OMe	C(0) SC ₃ H ₋	Ms	H H
	i-Pr i-Pr	Ħ 17	OMe	C(0) SC ₃ H ₇	C1	H T
45	i-Pr	. Н	OMe	C(S) 0Me	Ms	H
	i-Pr	H H	OMe	C(S) 0Me	C1	H
	i-Pr		OMe OMe	C(S)OEt	Ms	H
	1-11	H	0Me	C(S)OEt	CI	H

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		В	X		~	
5		<u> </u>	A	<u>Y</u>	Z	Q.
3	i-Pr	H	0Me	C(S)OCH(CH ₃) ₂	Ms	H
	i-Pr	H H H H	0Me	C(S)OCH(CH ₃) ₂	ĊĨ	Ħ
	i-Pr	H	0Me	C(S) SC ₃ H ₇	Ms	H
	i-Pr	H	0Me	C(S)SC ₃ H ₇	CI	H
10	i-Pr	H	0Me	C(S)SMe	Ms	H
	i-Pr	H	0Me	C(S) SMe	CI	H
	i-Pr	H	0Me	C(S)SEt	Ms	H
	i-Pr	H	0Me	C(S) SEt	CI	H
15	i-Pr	H	0Me	C(S) SCH(CH ₃) ₂	Ms	H
	i-Pr	Ħ	0Me	C(S) SCH(CH ₃) ₂	C1	H
	i-Pr	H	0Me	C(S) SC ₃ H ₇	Ms	H
	i-Pr	H	OMe	C(S) SC ₃ H ₇	CI	H
	i-Pr i-Pr	п	Br	COOMe	Ms	H
20	i-Pr	II U	Br.	COOMe	CI	H
	i-Pr	. п	Br P-	COOE t	Ms	11
	i-Pr	ннняннян	Br Br	COOEt COOCH (CH ₂) ₂	CI	H
	i-Pr	H U	Br	COOCH (CH ₃) ₂	Ms Cl	нннинниннинниннинн
25	i-Pr	нннннннн	Br	CON (CH ₃) ₂	Ms	n u
	i-Pr	Ħ	Br	CON (CH ₃) ₂	CI	H H
	i-Pr	Ħ	Br	CONHMe	Ms.	H 17
	i-Pr	Ħ	Br	CONHEt	Ms	Ħ
	i-Pr	H	. Br	CONHC ₃ H ₇	Ms	Ħ
30	i-Pr	H	Br	CONHCH (CH ₃) ₂	Ms	Ĥ
	i-Pr	H	Br	CONHC (CH ₃) ₃	Ms	Ħ
	i-Pr	H	Br	CONEtz	Ms	H
	i-Pr	H	Br	CONHC (CH ₃) ₃	Ms	H
35	i-Pr	H	Br	CONHC ₄ H ₉	Ms	H
	i-Pr	. Н	Br	CONHC ₄ H ₄	Ms	H .
	i-Pr	H	Br	CON (CH (CH ₃) ₂) ₂	Ms	нининининин
	i-Pr	H	Br	Y1	Ms	Ĥ
40	i-Pr	H	Br	Y2	Ms	H
40	i-Pr	H	Br	COOPh	Ms	H
	i-Pr	H	Br B-	COOCH ZPh	Ms	
	i-Pr i-Pr	H H	Br R-	COOCH ₂ CH=CH ₂	Ms	H
	i-Fr	п Н	Br	COOCH ₂ C≡CH	Ms	H H
45	i-Pr	n H	OEt OEt	COOMe COOMe	Ms Cl	u u
	i-Pr	п Н	0Et	COOME	Ms	H H
	i-Pr	H H	0Et	COOEt	C1	H
	7-11	п	UCE	COURT	OI	

5	A	В	Х	Y	Z	Q
Ū	i-Pr	H	0Et	COOCH (CH ₃) _z	Ms	п
	i-Pr	H	0E t	COOCH (CH ₃) ₂	ĊĨ	H
	i-Pr	H	0Et	CON (CH ₃) ₂	Ms	n n
	i-Pr	H H H	0E t	CON (CH ₃) ₂	Cl	<u>n</u>
70	i-Pr	Ħ	0Et	CONHMe	Ms	17
	i-Pr	H	0Et	CONHE	Ms	<u>п</u>
	i-Pr	Ħ	0Et	CONHC ₃ H ₇	Ms	II.
	i-Pr	Ħ	0Et	CONHCH (CH ₃) ₂	Ms	II.
15	i-Pr	Ħ	0Et	CONHC (CH ₃) ₃	ns Ms	п
15	i-Pr	Ħ	0Et	CONEtz	ns Ms	<u> </u>
	i-Pr	Ĥ	0Et	CONEC (CH ₃) ₃	Ms	п
	i-Pr	Ħ	0Et	CONHC4H4		<u>п</u>
	i-Pr	Ħ	0Et	CONHC4H4	Ms Ma	ннннннннннннннннннн
20	i-Pr	Ħ	0Et		Ms M-	<u>п</u>
	i-Pr	Ħ	0Et	CON (CH(CH ₃) _z) _z	Ms	п
	i-Pr	П.	0Et	YI	Ms	н
	i-Pr	H H		Y2	Ms	H
•	i-Pr	H	OEt OEt	COOPh	Ms	Ħ
25	i-Pr	H		COOCH ₂ Ph	Ms	<u>H</u>
	i-Pr	H	OEt	COOCH ₂ CH=CH ₂	Ms	Ħ
	i-Pr	H	OEt	COOCH ₂ C=CH	Ms	H
	i-Pr	H	OCH (CH ₃) ₂	COOMe	Ms	H
	i-Pr	<u>п</u>	OCH (CH ₃) ₂	COOMe	CI	H
30		H H	OCH (CH ₃) ₂	COOEt	Ms	H
	i-Pr	11	OCH (CH ₃) ₂	COOEt	C1	H
	i-Pr	H	OCH (CH ₃) z	COOCH (CH ₃) ₂	Ms	H H
	i-Pr	H	OCH (CH ₃) ₂	COOCH (CH ₃) ₂	CI	H
	i-P r	H	OCH (CH ₃) ₂	CON (CH ₃) ₂	Ms	H H
35	i-Pr	Ħ	OCH (CH ₃) ₂	CON (CH ₃) ₂	C1	H
	i-Pr	Ħ	OCH (CH ₃) ₂	CONHMe	Ms ·	H
	i-Pr	H H H H	OCH (CH ₃) ₂	CONHE t	Ms	H
	i-Pr	H	OCH (CH ₃) ₂	CONHC 3H 7	Ms	H
40	i-Pr	H	OCH (CH ₃) z	CONHCH (CH ₃) ₂	Ms	H
. •	i-Pr	H	$OCH(CH_3)_z$	CONHC (CH ₂) ₂	Ms	H
	i-Pr	Ħ	OCH (CH ₃) ₂	CONEtz	?Is	H
	i-Pr	H	OCH (CH ₃) ₂	conhc (ch ₂) ₃	Ms	H
	i-Pr	H H H H	OCH (CH ₃) ₂	CONHC ₄ H ₉	Ms	H H H
4 5	i-Pr	H	OCH (CH ₃) ₂	CONHC4H9	Ms	H
	i-Pr	H	OCH (CH ₃) ₂	CON (CH (CH ₃) ₂) ₂	Ms	H
	i-Pr	H	OCH (CH ₂) ₂	Yl	Ms	H
	i-Pr	H	OCH (CH ₂) _z	<u> </u>	Ms	H

5	<u>A</u>	B	X	Y	\overline{z}	ę.
	i-Pr	H	OCH (CH ₃) ₂	COOPh	Ms	TT
	i-Pr	H	OCH (CH ₃) _z	COOCH _z Ph	Ms	H H H H H H
	i-Pr	H	OCH (CH ₃) _z	COOCH = CH = CH =	Ms	<u>п</u>
	i-Pr	H H H H H H H	OCH (CH ₃) z	COOCH ₂ C=CH	Ms	<u>и</u> и
10	i-Pr	H	CH20CH3	COOMe	Ms	以. 算
	i-Pr	H	CH20CH3	COOMe	CI	11 11
	i-Pr	Ħ	CH2OCH3	COOEt	Ms	- H
	i-Pr	H	CH20CH3	COOE t	CI	H.
15	i-Pr	Ħ	CH2OCH3	COOCH (CH ₃) z	Ms	и и
	i-Pr	H	CH20CH3	COOCH (CH ₃) ₂	Cī	H H
	i-Pr	H	CH2OCH3	CON (CH ₃) 2	Ms	H II
	i-Pr	H .	CH ₂ OCH ₃	CON (CH ₃) _z	CI	Ħ
	i-Pr	Ħ	CH2OCH3	CONHMe	Ms	H .
20	i-Pr	<u>H</u>	CH2OCH2	CONHEt	Ms	Ħ
•	i-Pr	H H H	CH2OCH3	- CONHC ₃ H ₇	Ms	H H H H H
	i-Pr	<u>H</u>	CHzOCH3	CONHCH (CH ₃) ₂	Ms	. H
	i-Pr	Ħ	CH 20CH 3	CONHC (CH ₃) ₃	Ms	Ħ
25	i-Pr	H H H H	CH zOCH 3	CONEtz	Ms	Ħ
25	i-Pr	Ħ	CH ₂ OCH ₃	CONHC (CH ₃) ₃	Ms	Ħ
	i-Pr i-Pr	H	CH2OCH3	CONHC_H, ····	Ms	Ħ
	i-Fr	Ħ	CH2OCH3	CONHC ₄ H ₄	Ms	Ħ
	i-er i-er	H	CH 2OCH 3	CON (CH(CH ₃) ₂) ₂	Ms	Ĥ
30	i-Pr	H	CH2OCH3	YI	Ms	Ħ
	i-Pr	H	-CH2OCH3	У2	Ms	Ħ
	i-Pr	H	CH2OCH3	COOPh	Ms	Ħ
	i-Pr	H	CH ₂ OCH ₃	COOCH ₂ Ph	Ms	H
	i-Pr	H	CH 20CH 3	COOCH ₂ CH=CH ₂	Ms	H
35	Me	H H	CH20CH3	COOCH ₂ C≡CH	Мs	H
	Иe	n H	NO z	COOMe	Ms	H
	Me	Д 17	NO z	COOEt	Ms	H H H H H H H H H H H H H H H H H H H
	ne Me	H	NO ₂	COOCH (CH ₃) ₂	Ms	H
40	ne Me	H H	NO _z	CONMez	Ms	H
	Me	n H	NO 2	CONEtz	Ms	H
	Ме		NO z	COOC ₃ H ₇	Ms	H
	ne Me	H	NO _z	Ϋ́I	Ms	H
	ne Ne	H H	NO z	. Y2	Ms	H H
45	Me	п Н	МО 2	¥3	Ms	H
	Me	n H	NO _z	COOPh	Ms	H H H
	Me	л Н	NO _z	COOCH ₂ Ph	Ms	H
-		п	NOz	COOCH ₂ CH=CH ₂	Ms	H

	A	B	X	Y	Z	- Q
5	Me	Ħ	CF 3	C00Me	14	
	Me	нинининининининини	CF ₃	COORE) is	нннинининнинининининининининининини
	Мe	Ħ	CF ₃	COOCH (CH ₃) _z	Ms V-	H
	Me	Ĥ	CF ₃	CONMez	Ns Vo	H
10	Me	Ħ	CF ₃	CONE t _z	Ms V-	H
	Me	Ĥ	CF ₃	COOC ₃ H ₇	Ms V-	H
	Мe	Ħ	CF ₃	YI	Ns V-	H
	Me	Ħ	CF ₃	Y2	Ms V-	Ħ Ħ
	Me	Ħ	CF ₃	Y3	ys M-	<u>H</u>
15	Me	Ħ	CF ₃	COOPH	Ms V-	H
	Me	Ĥ	CF ₃	COOCH ₂ Ph	Ms Ma	<u>H</u>
	Me	Ħ	CF ₃	COOCH ₂ CH=CH ₂	Ms M-	11
	Me	Ĥ	CN 3	COOMe COOME	Ms	11
20	Me	Ħ	CN CN	COORE	Ms ·	п
	Me	Ĥ	CN CN	COOCH (CH ₃) ₂	Ms	<u> </u>
	Me	Ĥ	CN	CONMez	ns Y	11
	Me	Ħ	CN	CONFET	Ms	n n
	Иe	Ħ	CN	· COOCaH7	Ms V-	H
25	Мe	Ħ	CN CN	YI	ns Y-	11
	Мe	Ä	CN	¥2	Ms M	H
	Иe	Ħ.	CN	12 Y3	Ms *-	H
	Me	Ħ	CN	COOPh	Ms V-	H
	Мe	Ë	CN	COOCH ₂ Ph	Ms V-	H
30	Me	Ĥ	· CA	COOCH ₂ CH=CH ₂	Ms V	Ħ
	Иe	Ë	CH ₂ OEt	COOK COOK	Ns M-	H.
	Me	ä	CH ₂ OEt	COORE t	Ms	Щ.
	Мe	Ä	CH ₂ OEt	COOCH (CH ₃) ₂) is	H
35	Me	Ħ	CH _z OEt	CONMez	Ms	H.
	Йe	Ä	CH ₂ OEt	CONFiz	Ms V-	H
	Мe	Ħ	CH ₂ OEt	COOC ₃ H ₇	ž V	H
	Me -	H	CH ₂ OEt	COOC3A7) Ya	H
	Йe	Ħ	CH _z 0Et	Y2	Ms V-	• н
40	Йe	Ĥ	CH ₂ OEt	Y3	Ms V-	11
	Иe	H	CH ₂ OEt	COODE	Ms	H
	Жe	H	CH ₂ OEt	COOPh	Ms H	H
	Ме	H	CH ₂ OEt	COOCH CH-CH	Ms Ma	H H
45	Иe	H	Et	COOCH ₂ CH=CH ₂	Ms M-	П
45	Иe	H	Et	COORE	Ms V-	H H
	Me	H	Et	COOEt	. Ms	n u
	Йe	H	Et	COOCH (CH ₃) _z	Ms Ma	H
-			<i>i</i> i i	CONMez	Ms	H

5	A	В	Х	Y	Z	Q.
	Me	H	Et	CONEtz	Ms	Ħ
	Мe	H	Et	COOC₃H ₇	Ms	ਸ
	Me	H H H H	Et	Yl	Ms	ннининининининининининининининини
	Me	Ħ	Et	Ÿ2	Ms	Ħ
10	Me	H	Et	<u> </u>	Ms	Ĥ
	Me	H	Et	COOPh	Ms	Ħ
	Me	H H	Et	COOCH _z Ph	e Ns	Ħ
	Me	Ĥ	Ēŧ	COOCH 2 CH = CH 2	Ms	Ħ
15	Me	Ħ	i-Pr	COOMe	Ms	Ħ
	Me	H H	i-Pr	COOEt	Ms	Ħ
	Me	Ħ	i-Pr	COOCH (CH ₃) ₂	Ms	Ħ
	Мe	Ĥ	i-Pr	CONMez	Ms	Ĥ
	Мe	ਸੌ	i-Pr	CONEtz	Ms	ਸੌ
20	Мe	Ĥ	i-Pr	COOC ₃ H ₇	Ms	Ħ
	Мe	ਜੋ	i-Pr	YI	Ms	Ħ
	Йe	Ħ	i-Pr	¥2	Ms	Ħ
	Ме	H H H H	i-Pr	Ÿ3	Ms	#
	Me	H H	i-Pr	COOPh	Ms	n n
25	Me	H	i-Pr	COOCH ₂ Ph	Ms	H H
	Me	H H H H H	i-Pr	COOCH ₂ CH=CH ₂	Ms	H
	Жe	H	n-Pr	COOMe	en. SK	#
	Me	H	n-Pr	COOEt	Ms	n n
30	Me	Ħ	n-Pr	COOCH (CH ₃) ₂	Ms	п п
30	Иe	Ħ	n-Pr	CONMe ₂	Ms	n n
	Ме	n n	n-Pr	CONE t ₂	Ms	. 11
	Me	Ħ	· n-PT	COOC ₃ H ₇	Ms	n n
	Me	H	n-Pr	Y1	ns Ms	n u
35	Me	Ħ	n-Pr	¥2	Ms	11
	_Me	Ħ	n-Pr	¥3	Ms	п. П
	Me	Ħ	n-Pr	COOPh	ns Ms	<u> </u>
	Me	H	n-Pr	COOCH ₂ Ph	ns Ms	. U
	Me	n n			Ms	17
40	ne Me	H	n-Pr	COOCH z CH = CH z	Ms	H
	ne Me	n H	I T	COOMe		H
			Ţ	COOEt	ns NS	
	Ме	H H H	į,	COOCH (CH ₃) ₂	Ms 	H. H H H -H -
	Ме	Ħ	1	CONMez	Ms Ma	П U
45	Me M-	II II	1 7	CONEtz	Ms -	п
	Me V-	H	1	COOC ₃ H ₇	Ms	n u
	Йe	H	Ţ	Y1 Y2	Ms	-n -
_	Me	H	I	YZ	Ms	H

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5	A	В	X	Y	Z	Q
•	Мe	H	Ţ	Y3	Ms	17
	Me	Ħ	Ť	COOPh	ns Ms	n n
	Me	Ħ	i	COOCH ₂ Ph	ns Ms	Д 17
	Мe	Ĥ	Ť	COOCH 2 CH=CH 2	Ms	<u> </u>
10	Et		ЙОz	COOMe	ns Ms	
	Et	Ħ	NO ₂	COOEt	ns Ms	<u>п</u>
	Et	Ħ	NO ₂	COOCH (CH ₃) ₂	ns Ms	<u>п</u> т
	Et	Ħ	NO _z	CONMez	ris Ms	<u>п</u>
	Et	Ħ	NO ₂	CONEtz	ns Ms	п
15	Et	Ħ	NO _z	C00C ₃ H ₇	Ms .	Д 17
	Et	н	NO ₂ .	Y1	ns Ms	<u>п</u>
	Et	ਜ	NO _z	¥2	Ms	a a
	Et	Ĥ	NO ₂	¥3		<u>n</u>
20	Et	Ħ	NO ₂	COOPh	Ms Ms	П 13
	Et	Ħ	NO ₂	COOCH ₂ Ph		Д 17
	Ēŧ	H	NO ₂	COOCH ₂ CH=CH ₂	Ms Ms	Д 17
	Et	Ħ	CF ₃	COOCH 2 CH 2 CH 2	Ms V-	<u>п</u>
	Et	Ħ	CF ₃	COORE) Ms	. <u> </u>
25	Et	Ħ	CF ₃	CUUCA (CA)	Ms .	# #
	Et	H	CF ₃	COUCH (CH ₃) ₂	ns L	n n
	Et ·	H	CF ₃	CONMez	Ms	n
	Et	Ħ	CF ₃	CONEt _z	Ms ·	Ħ
	Et	Ħ	CF3	COOC ₃ H ₇	Ms M-	11
30	Et	· H	· CF3	Y1 Y2	Ms u_	н
,	Et	Ħ	CF ₃	Y3	Ms V-	П
	Et	H	CF ₃	IJ COORE	Ms M	Ħ
	Et	H	CF ₃	COOPh	Ms Ma	П.
35	Et	H ·	CF ₃	COOCH CU CU	Ms Y	n n
50	F÷	H	CN 3	COOCH ₂ CH=CH ₂	Ms Ma	П
	£t £t	Ħ	CN	COOMe	Ns.	H
	Et	H		COOEt	. Ms	H
	Et	H	CN	COOCH (CH ₃) _z) s	H H
40	Et	H	CN	CONMe _z) is	ii.
	Et	n H	CN	CONEtz	Мs	H
	Et	H	СХ	C00C3H7) is	H
	Et	n H	CN	Y1	ЙS	H H
	Et		СИ	Y2	ğs	H TT
45	Et	H	CN	Y3	ÿs	H ·
	Et	H H	СИ	COOPH	Ms	H H
	Et	n H	CN	COOCH SH CH	Ms	H
_	ما نا	0	СХ	COOCH 2CH=CH2	Ms	H

0 282 944

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5	Et	Ħ	CH _z OEt	C00Me	W-	77
	Et	нининининнинниннин	CH ₂ OEt	COORE) Ms	Ħ
	Et	17			Ms Y	
	Et	<u>п</u>	CH ₂ OEt	COOCH (CH ₃) _z	Иs	H
10	Et	П 17	CH ₂ OE t	CONMez	Ms	Н
	E L	п	CH ₂ OEt	CONEtz	Ms	H
	Et	Ħ	CH ₂ OEt	COOC ₃ H ₇	Ms	H
	Et	H	CH _z OEt	<u>Y1</u>	Ms	H
	Et	H	CH ₂ OEt	¥2	Ms .	H
15	Et	Ħ	CH ₂ OEt	Y3	Ms	H
-	Et	H	CH ₂ OEt	COOPh	Ms	H
	Et	H	CH ₂ OEt	COOCH ₂ Ph	Ms	H
	Et	H	CH ₂ OEt	COOCH _z CH=CH _z	Ms	H
	Et	H	Et	C00Me	Ms	H
20	Et	H	Et	COOE±	Ms	Ħ
	Et	H	Et	COOCH (CH ₃) _z	Ms	·Ħ
	Et	Ĥ ·	Et	CONMez	Ms	H
	Et	्रम	Et	CONEtz	Ms	<u>H</u>
	Et	Ħ	Et	COOC ₃ H ₇	Ms	нннннннн
25	Et	Ħ	Et	Y1	Ms	п 11
	Et	H .	Et	¥2	ns Ms	Ц U
	Et	11	Et	Y3		<u> </u>
	Et	H	Et	. 19	Ms	<u>п</u> 17
	Et.	H		COOPH	Ms V-	п
30	Et .	• Н	Et .	COOCH ₂ Ph	Ms	n 7
	E	П	Et	COOCH ₂ CH=CH ₂	Ms	H
	Et	H	i-Pr	COOMe	Ms	<u>H</u>
	Et	H	i-Pr	COOEt	Ms	H
	Et	H	i-Pr	COOCH (CH ₃) 2	Ms	H
35	Et	H	i-Pr	CONMez	Ms	H
	Et	Ħ	i-Pr	CONEtz	2M	H
	Et	H	i-Pr	COOC₃H _₹	Ms	H
	Et	H	i-Pr	Y1	Ms	H
	Et	H	i-Pr	ŸŽ Ÿ3	Ms	H
40	Et	H	i-Pr	Y3	2K	H
	Et	H	i-Pr	COOPH	Ms	H
	Et		i-Pr	COOCH ₂ Ph	Ms	H
	Et	H H	i-Pr	COOCH _z CH=CH _z	Ms	Ĥ
	Et.	Ħ	n-Pr	COOMe	Ms	Ħ
45	Et	H	n-Pr	COORE	Ms	H H H H
	Et	Ħ	n-Pr	COOCH (CH ₃) ₂	- Ms	H.
	Et	H	n-rr n-Pr		Ms	H .
-	i i	n	n-rr	CONMez	ns	<u></u>

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5 -	A	В	X	Y	Z ·	Q
	Et	H	n-Pr	CONEtz	Ms	H
	Et	H	n-Pr	COOC ₃ H ₇	Ms	Ħ
	Et	H	n-Pr	Y 1	Ms	ннннннннннн
	Et	H H	n-Pr	<u> </u>	Ms	Ħ
10	Et	H	n-Pr	<u> </u>	Ms	Ä
	Et	Ħ	n-Pr	COOPh	Ms	Ä
	Et	H	n-Pr	COOCH ₂ Ph	Ms	ਜੋ
	Et	H	n-Pr	COOCH ₂ CH=CH ₂	Ms	Ĥ
15	Et	H	Ī	COOMe	Ms	Ĥ
	Et	H H H	Ī	COOEt	Ms	ਸ
	Et	Ĥ	Ī	COOCH (CH ₃) ₂	Ms	Ĥ
	Et	Ħ	Ī	COMMez	Ms	Ħ.
	Et	Ħ	Ī	CONEtz	Ms	Ĥ
20	Et	Ħ	Ī	C00C3H7	Ms	Ħ
	Et	Ä	ī	Y1	. Ms	Ħ
	Et	Ħ	Ī	Ÿ2	Ms	Ħ
-	Et	Ħ	Ť	ŸĨ	Ms.	H.
	Et	HHHHHHHH	į.	COOPh	Ms	Ħ
25	Et	Ĥ	Î	COOCH ₂ Ph	lls	H H H
	Et	Ħ	Ī	COOCH ₂ CH=CH ₂	Ms	Ħ
	i-Pr	Ĥ	NO ₂	COOMe	Ms	Ħ
	i-Pr	Ħ	NOz	COOEt	Ms	Ħ
30	i-Pr	Ē	NOz	COOCH (CH ₃) ₂	Ms	Ĥ
50	i-Pr	Ē	- NOz	CONMez	Ms	Ħ
	i-Pr	Ħ	NOz	CONEtz	Ms	Ħ
	i-Pr	H H	NOz	COOC ₃ H ₇	Ms	Ä
	i-Pr	Ħ	NO _z	YI	Ns	Ħ
35	i-Pr	Ħ	NO _z	¥2.	2K	ннннннн
	i-Pr	H .	NO _z	¥3	Ms	Ħ
	i-Pr	Ħ	NO ₂	COOPH	Ms	Ħ
	i-Pr	Ħ	NO _z	COOCH ₂ Ph	Ms	Ħ
	i-Pr	Ħ	NO ₂	COOCH 2CH=CH 2	Ms	Ħ.
40	i-P r	H	CF ₃	COOMe	Ms	Ħ
	i-P r	Ħ	CF ₃	COOKE	Ms	Ħ
	i-Pr	H	CF ₃	COOCH (CH ₃) _z	Ms	Ĥ
	i-P r	H	CF ₃	CONMe _z	Ms	Ĥ
45	i-Pr	H	CF ₃	CONTE ₂	Ms	Ä
- 0	i-Pr	H	CF ₃	COOC ₃ H ₇	Ms	Ë
	i-Pr	H	CF ₃	YI .	Ms	H
	i-Pr	H		Y2	ns Ns	Ħ
_	1-11	ш.	CF ₃		119	

						
5	A	В	X	Y	Z	Q
	i-Pr	Ħ	CF 3	Y3	Иs	H
	i-Pr		CF₃	COOPH	Ms	Ħ
	i-Pr	Ħ	CF ₃	COOCH 2Ph	Ms	Ĥ
10	i-Pr	H	CF 2	COOCH ₂ CH=CH ₂	Ms ·	Ħ
	i-Pr	H	CN	C00Me	Ms	Ĥ
	i-Pr	H	CN	COOE t	Ms	Ħ
	i-Pr	. <u>H</u>	CN	COOCH (CH ₃) ₂	Ms	H
	i-Pr	H	, CN	CONMez	Ms	H
15	i-Pr	H	CN	CONEtz	Ms .	H
	i-Pr	H	CN	C00C ₃ H ₇	Ms	H
	i-Pr	H T	CX	<u> </u>	Ms	H ·
	i-Pr i-Pr	<u>11</u>	CN	¥2	Ms	H
20	i-Pr	п	CN CN	Y3	Ms .	H
	i-Pr	H	CN CN	COOPh	Ms	H
	i-Pr	n H	C.Y	COOCH CH CH	· Ms	н
	i-P r	H H	CH ₂ OE t	COOCHzCH=CHz COOMe	Ms · ····	п
	i-Pr	H.	CH ₂ 0Et	COORE	ak As	n u
25	i-Pr	Ħ	CH ₂ 0Et	· COOCH (CH ₃) _z	ns Ms	<u>п</u>
	i-Pr	H - H H H	CH _z 0Et	CONMez	. ns Ms	П.
	i-Pr	Ħ	CH ₂ 0Et	CONEtz	Ms	H
	i-Pr	H	CH ₂ 0Et	COOC ₃ H ₇	Ms	Ħ
30	i-Pr	H	CH=0Et	YI.	Ms	Ħ
	i-Pr	H	CHz0Et	<u> </u>	Ms	Ħ
	i-Pr	H	CH20Et	Ÿ3	Ms	Ĥ
	i-Pr	H	CH ₂ OEt	COOPh	Ms	Ħ
	i-Pr	H	- CH _z OEt	COOCH ₂ Ph	Ms	H
35	i-Pr	H	CHzOEt	COOCH _z CH=CH _z	Ms	H
	i-Pr	Ħ	Et	C00Me	Ms	нннинининнинниннинниннинниннинниннин
	i=Pr	Ħ	Et	COOEt	Ms	H
	i-Pr	H	Et	COOCH (CH ₃) ₂	Ms	Ħ
40	i-Pr i-Pr	H H	Et	CONMez	Ms	H
	i-Pr	п Н	Et Et	CONEt _z	Ms	H H
	i-?r	п Н		COOC 3H 7	žš.	
	i-Pr	п Н	Et Et	Y1	Ms Ma	H H
45	i-Pr	H	Et	¥2	Ms Ma	n U
70	i-Pr	H	Et	УЗ СООРҺ	Ms Ms	H H
	i-Pr	H	Et	COOCH ₂ Ph -	Ms	H H
	i-Pr	H	Et	COOCH ₂ CH=CH ₂	ns Ms	H H
-		••		OOOGHZOH-GHZ	117	

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5	A	В	X	Y	Z	ę.
J	i-Pr	H	i-Pr	COOMe	Ms	H
	i-Pr	H	i-Pr	COOEt	Ms	ਸੌ
	i-Pr	H	i-Pr	COOCH (CH ₃) ₂	Ms	Ħ
	i-Pr	H	i-Pr	CONMez	Ms	Ħ
10	i-Pr	Ħ	i-Pr	CONEtz	Ms	H H
	i-Pr	Ĥ	i-Pr	C00C ₃ H ₇	Ms	. #
	i-Pr	Ĥ	i-Pr	Y1	Ms	ü ü
	i-Pr	Ĥ	i-Pr	Ÿ2	Ms .	<u> </u>
	i-Pr	Ħ	i-Pr	¥3	Ms	H .
15	i-P r	Ĥ	i-Pr	COOPh	iis IIs	n n
	i-Pr	Ħ	i-Pr	COOCH ₂ Ph	is Si	17
	i-Pr	Ħ	i-Pr	COOCH ₂ CH=CH ₂	en eK	11
	i-Pr	H	n-Pr	COOCH COOCH	ns Ns	ннинининининининининини
20	i-Pr	H	n-Fr n-Pr	COORE		<u>П</u>
20	i-Pr	H			is N-	. 17
	i-Pr	Ω Π	n-Pr	COOCH (CH ₃) ₂	Ms	П
		Д	n-Pr	CONMez	Ms	H
	i-Pr	H H H H	n-Pr	CONEtz	Ms .	H.
25	i-Pr	T T	n-Pr	COOC ₃ H ₇	Ms	H
	i-Pr	Ħ	n-Pr	YI	Ms	H
	i-Pr	H	n-Pr	<u>Y2</u>	Ms	Н
	i-Pr	H H	n-Pr	Y3	Ms	H
	i-Pr	<u>н</u> .	n-Pr	COOPh	Ms	H
30	i-Pr	H H	n-Pr	COOCH ₂ Ph	Ms	H
	i-Pr	H	, n-P r	COOCH _z CH=CH _z	Ms	H
	i-Pr	H	I	C00Me	Ms	
	i-Pr	H	I	COOEt	Ms	Ħ
	i-Pr	H	I	COOCH (CH ₃) ₂	aK s	H
35	i-Pr	H	I	CONMez	zK	H
	i-Pr	H	I	CONEtz	2K	H
	i-Pr	H H H H	I	COOC ₃ H ₇	Ms	H H H H H H H
	i-Pr	H	I	Yl	Ms	H
	i-Pr	H	I	Y2	Ms	H
40	i-Pr	H	Ī	¥3	. Ms	H
	i-Pr	H	Ĭ	COOPh	Ms	H
	i-Pr		Ĭ	COOCH ₂ Ph	ZK	
	i-Pr	Ĥ	Ī	COOCH ₂ CH=CH ₂	ZK.	H
45	allyi	H H H H	ЙОz	COOMe	Ms	H H H
~~	allyi	Ħ	NO _z	COOEt	Ms	Ħ
	allyi	Ĥ	NO ₂	COOCH (CH ₃) _z	Ns.	Ħ
	allyl	Ħ	NO ₂	CONMez	Ms	Ĥ
			110.5			

						
5	A	B	X	Y	Z	Q
	allyi	H	NO z	CONEtz	Ms	Ħ
	allyl	ннннннннн	NOz	COOC ₃ H ₇	Ms	нннинниннинниннинн
	allyl	H	NO z	Y1	Ms	Ħ
10	allyi	H	NO ₂	Y2	Ms	Ħ
	allyi	<u>H</u>	NOz	Y3	Ms	Ħ
	allyl	H	NO z	COOPH	Ms	Ħ
	allyi	<u>H</u>	NO ₂	COOCH ₂Ph	Ms	Ħ
	allyi	Ħ	NO 2	COOCH ₂ CH=CH ₂	Ms	Ħ
15	allyl	H	CF ₃	C00Me	Иs	H
	allyl	H	CF 3	COOE ±	Иs	Ħ
	allyi	H	CF ₃	COOCH (CH ₃) ₂	Ms	H.
	allyl	<u>H</u>	CF 3	CONMez	Ms	H
20	allyl	H	CF 3	CONEtz	Ms	H
	allyi	H	CF3	COOC ₃ H ₇	Ms	H
	allyl	Н.	CF =	YI	Ms	H
	allyl	H H H	CF 3	<u>Y2</u>	Ms	H
	allyl	: n	CF3	¥3	Ms	H
25	allyl allyl :	H H H H	CF3	COOPh	Ms	H
	allyl	n v	CF₃	COOCH ₂ Ph	Ms	H
	allyi	n T	CF₃	COOCH ₂ CH=CH ₂	Ms	H
	allyl	п	CN	COOMe ·	Ms	H
30	allyi	п Н	CN	COOEt	Ms	H
30	allyl	<u>п</u>	CN	COOCH (CH ₃) ₂	Ms	H
	allyl	H H	. CN	CONMez	Ms	H
	allyl	H	CX	CONE tz	Ms	H
	allyl	H	CN CN	COOC ₃ H ₇	Ms	H
35	allyi	H	CN	YI YO	Ms	H
	allyi	Ħ	CN	Y2	Ms .	H
	aHyi	H	C.Y	Y3 COOPh	Ms	Ĥ
	allyl	H	CN .	COOCH ₂ Ph	Ms V-	H
40	allyl	Ħ	C.A.		Ms M-	H
40	allyi	H	CH ₂ 0Et	COOCH ₂ CH=CH ₂ COOMe	Ms V-	H
	allyl	Ĥ	CH _z 0Et	COOME	Ms V-	H
	allyi	H	CH _z OE t		Ms V-	H
	ailyl	H	CH ₂ OE t	COOCH (CH ₂) ₂ CONMe ₂	йs ~ _	H H .
45	allyi'	Ħ	CH ₂ OEt	CONTE ₂	Ms V-	n ·
	allyi	H	CH ₂ OE t	CONE 12 COOC 3H7	Ms Ms	H.
	allyi	Ä	CH ₂ OE t	- YI	ns Ms	H H
	allyl	H	CH ₂ OEt	Y2	ris Ms	n H
-			J11 2 7 C C	14	112	a a

_	A	В	Х	Y	Z	
5	allyi	Н	CH ₂ OE t	У З		
	allyl	Ħ	CH ₂ OEt	COOPh	Йs	H
	allyl	Ĥ	CH ₂ OEt	COOCH ₂ Ph	Ms	H
	allyi	Ħ	CH ₂ OEt	COOCH _z CH=CH _z	Ms M-	H
10	allyl	Ħ	Et	COOMe	Ms ·	Ħ
	allyl	Ħ	Et	COORE	Ms V-	H
	allyi	Ħ	Et	COOCH (CH ₃) _z	Ms	Ħ
	allyl	Ħ	Et	CONMez	Ms Ms	H ***
15	allyi	H	Ēt	CONEtz	ns Ms	E
,,	allyl	Ĥ	Et	COOC ₃ H ₇	Ms	U U
	allyl	Ħ	Ēŧ	Y1	ns Ms	a v
	allyl	Ħ	Et	Ÿ2	ns Ms	<u>п</u>
	allyl	H	Et	Ÿ3	Ms	п п
20	allyi	H	Et	COOPH	Ms	11
	allyl	H H H H H H H H H	Et	COOCH ₂ Ph	Ms	H H
	allyl	H	Et	COOCH ₂ CH=CH ₂	Ms	ннннннннннннн
	allyl	H	i-Pr	COOMe	is Ns	H H
05	allyi	H	i-Pr	COOEt	Ms	H H H H H H H H H
25	allyl	H H H	i-Pr	COOCH (CH ₃) ₂	Ms	Ħ
	allyi	Ħ	i-Pr	CONMez	Ms	ਸ
	allyl	H	i-Pr	CONEtz	zK	Ħ
	allyl	H	i-Pr	COOC ₃ H ₇	Ms	Ħ
30	allyl	H	i-Pr	Yl	Ms	Ħ
	allyl	H	·i-Pr	Y2	Ms	Ħ
	allyi	H	i-Pr	Y3	Ms	Ħ
	allyl	H	i-Pr	COOPh	Ms	H
	allyl	H	i-P r	COOCH _z Ph	lls .	Ħ
35	allyl	H	i-P r	COOCH _z CH=CH _z	Ms	Ĥ
	allyl	H	n-Pr	C00Me	Ms	H
	allyl	H	. n-Pr	COOE t	Ms .	H H.
	allyl	H ·	n-Pr	COOCH (CH ₃) ₂	Мs	H.
40	allyl	H	· n-Pr	CONMez	Ms	H
	allyl	H	n-Pr	CONE t _z	Ms	H
	allyi	H	n-Pr	COOC ₃ H ₇	Ms	H
	allyl	H	n-Pr	YI	Ms	H ·
	allyl	H	n- <u>P</u> r	¥2	Ms	H
45	allyl	H	n-Pr	¥3	Ms	H
	allyi	H	n-Pr	СООРЬ	Ms	H
	allyl	H	n-Pr	COOCH ₂ Ph	Ms	H
	allyl	H	n-Pr	COOCH z CH = CH z	Ms	H

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	<u>A</u>	В	Х	Y	Z	Q	
5	allyl	H	I	COOMe	Ms	H	
	allyl	H	I	COOEt	Ms		
	allyl	H	Ĭ	COOCH (CH ₃) ₂	ns Ms	H H H	
	allyl	H	I	CONMez	Ms	<u>п</u>	
	allyl	H H H	Ĭ	CONEtz	Ms		
10	ailyl	H	Ī	COOC ₃ H ₇	ns Ms	H	
	allyl	H	Ī	Y1	ns Ms	П	
	allyi	Ħ	Ĭ	ŸŽ ^_	ns Ms	H H H	
	allyl	H H H	Ī	Ÿ3	ns Ms		
	allyl .	H	Ī	COOPh	ns Ms	H	
15	allyl	H	ī	COOCH ₂ Ph		H	
	allyl	Ħ	Ť	COOCH ₂ CH=CH ₂	Ms Ma	H	
	allyl	Ħ	Me	COOH	Ms Ma	H	
	allyl	Ħ	C1	COOH	Ms M-	H H	
20	Мe	Ħ	Me	COOH	Ms M-	11	
20	Me	Ħ	C1	COOH	žš.	H	
	Et	H	Me	COOH	Ms	Ħ	
	Et	Ĥ	CI	COOH	Ms	H	
	i-Pr	Ä	Me		Ms	<u>H</u>	
25		Ħ		COOH	Ms	H	
25 -	i-Pr	H	C1	COOH	ns Ms	H	

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	A	В	Х	Y		Q.
5	Иe	H	C00Me	CH2OCH2CH=CH2	Ms	
	Мe	H	C00Me	CH ₂ OCH ₂ C = CH	Ms	п.
	Ме	ннининниннинниннин	COOMe	SCH ₃	ns Ms	нынинининниннынынын
	Me	· H	C00Me	CH ₂ OH		П
10	Me	Ĥ	COOMe	CH ₂ SCH ₃	Ms V-	Ħ
	Et	Ħ	COOMe	CH ₂ OCH ₂ CH=CH ₂	Ms	Ħ
	Et	Ħ	COOMe	CH UCA C CA	ğs	Ħ.
	Et	H	COOMe	CH ₂ OCH ₂ C≡CH	Ms	Ħ
	Et	H	COOMe	SCH ₃	Ms	H
15	Et	H	COOMe	CH 2OH	Ms ⁻	H
	i-Pr	11	COOMe	CH ₂ SCH ₃	Ms	H
	i-Pr	· ET	COOME	CH ₂ OCH ₂ CH=CH ₂	Ms	H
	i-Pr	<u> </u>	COOMe	CH ₂ OCH ₂ C≡CH	2M	H
	i-Fr	1	CO0Me	SCH ₃	Ms	H
20		<u> </u>	CO0Me	CH ₂ OH	Ms	H
	i-Pr	<u> </u>	CO0Me	CH ₂ SCH ₃	Ms	H
	Иe	H	COOE t	CH ₂ OCH ₂ CH=CH ₂	Ms	H
	Ме	<u>H</u>	COOEt	$CH_{2}OCH_{2}C = CH$	Ms	Ħ
	Иe	. H	COOE t	SCH ₃	Ms	Ĥ
25	lie	• Н	COOE t	CH ₂ OH	Ms	· #
	Ме	H	CO0Et	CH ₂ SCH ₃	Ms	Ħ
•	Et	Ħ	COOE t	CH2OCH2CH=CH2	Ms	Ħ
	Et	H	COOE:	CH ₂ OCH ₂ C=CH	Ms	Ħ
	Et	H	COOE t	SCH ₃	ns Ns	11
30	Et	H	COOE ±	CH ₂ OH	Ns	п
	Et	H	COOEt	CH ₂ SCH ₃	Ms	П
	i-Pr	Ĥ	COOE t	CH ₂ OCH ₂ CH=CH ₂	ns Ns	п
	i-Pr	Ĥ	COOEt	CH ₂ OCH ₂ C≡CH	ns Ns	Д .
35	i-Pr	Ĥ	COOEt	SCH ₃		n n
33	i-Pr	Ä	COOEt	CH ₂ OH	Ms W-	H
	i-Pr	Ħ	COOEt		Ms	H
	Me	Ħ	Me	CH ₂ SCH ₃	Ms	H H H H H
	Me	H		C00Y4	Ŋs	H
40	Иe	H	Ме	C00Y5	lis	H
	Ме		Ме	C00Y6	Ms	H
		Ħ	<u>Ж</u> е	COOCH 2CH 2C1	ak	H
	Me	H	Ме	COOCH ₂ CF ₃	Ms	H
	Me	H	Me	COOCH ₂ CCl=CH ₂	zK	H
45	Me	H	Ме	COOCH ₂ CH ₂ OCH ₃	Ms	H
	Иe	H	Me	COOCH ₂ SCH ₃	Ms	H
	Иe	. Н	Йe	COOCH 2CH 2OCH 2CH 2C1	Ms	H H H H H
	Me	H	Ме	COOCH 2CH 20Ms	Ms	Ħ
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	A	В	X	Y	z	Ę
5	Иe	Ħ	Мe	COCCH2OCH2CH2OCH2	Ms	77
	Me	H	Me	COOCH 2 CH 2 Ms		H
	Me	ä	Me	COOCH CH CH	Ms	ннининнинин
	Me	H H	ne Me	COOCH ₂ CH ₂ CN	Ms	Ħ
10	Иe	H		COOCH CH ANHCH	ns.	H
,,	Иe	• 11 17	Иe	COOCH ₂ CH ₂ OH	Ms	H
	ne Me	H	Иe	COOCH ZCH ZCH ZNO Z	. Ms	H
		п.	Ме	COOY7	Ms	H
	Ме	Ħ	Иe	COOCH ₂ COCH ₃	Ms	H
15	Me	Ħ	Мe	COOCH ₂ CO ₂ CH ₃	Ms	Ħ
13	Me	H	Me	COOCH (CH ₃) COOE t	Ms	Ħ
	Мe	H	Me	COOCH ₂ CH ₂ OPh	Ms	Ħ.
	Мe	H	Me	COOCH = CH = OCH = Ph	Ms	Ħ
	Me	H	Мe	COOPh-4-CH3	Ms	H.
20	Иe	Ħ	Me	C00Ph-4-C1	Ms	ğ
	Me	Ħ	Мe	COOPh-4-NO ₂	Ms	17
	Me	Ħ	, Me	COOCH 25 Me3		Д 17
	Иe		Ме	C00CM #311163	. Ms	H
	Ме	Ħ	Me		Ms -	· · · · · · · · · · · · · · · · · · ·
25	Me	17	ne Me	. COOCH=Y8	Ms	H H H
	Me	11 11		COOY9	Ms	Ħ
	Me	Ω. Ω.	Me	COOY10	Ms	Ħ
	Me	11 T	. Ne	CONHSO 2CH3	Ms	H
	ne Me	Д 17	Иe	CONHSO ₂ CF ₃	ils	H
30		<u>n</u>	C1	C00Y4 ·	Иs	H
	Me M-	H	C1	C00Y5	Ms	H
	Me	<u>H</u> .	. C1	C00Y6	Ms	·H
	Мe	H	CI	COOCH ₂ CH ₂ CI	Ms	H
	Me	H	C1	COOCH ₂ CF ₃	Жs	H
35	Me	H	CI	COOCH ₂ CCl=CH ₂	Ms .	Ħ
	Ме	H	CI	COOCH ₂ CH ₂ OCH ₃	Ms	Ĥ
	tie	H	CI	COOCH _z SCH ₃	Ms	Ħ
•	Me	H	Cl	COOCH 2 CH 2 O CH 2 CH 2 CI	Ms	H H H H
	Мe	H	CI	COOCH 2 CH 2 OMS	Ms	Ä
40	Me	H	CI	COOCH = OCH = CH = OCH =	Ms	H
	Мe	H	CI	COOCH = CH = Ms	Ms	
	Me	H H	C1	COCHECHES KO _S HO _S CHOOOO		H
	Me	Ħ	CI		Ms V-	H
	Ме	H	CI	COOCH CHENHCH	Ms L	H
45	Me	H		COOCH_CH_CH_OH	Ms	H
	Me .	n H	CI	COOCH 2 CH 2 CH 2 NO 2	Ms	·H
	Me -		CI	COOY7	Ms	H
_	116	. Н	CI	COOCH ZCOCH 3	Ms	. Н

5 -	A	В	Х	Y	Z	Ç,
	Мe	нннннн	Cl	COOCH ₂ CO ₂ CH ₃	Ms	H
	Иe	H	C1	COOCH(CH ₃)COOEt	Ms	Ħ
	Мe	H	Cl	COOCH _z CH _z OPh	Ms	H H H H H H H H H H H H H H H H H H H
10	Мe	H	CI	COOCH ₂ CH ₂ OCH ₂ Ph	Ms	H
,,,	Мe	H	CI	COOPH-4-CH2	Ms	H
	Мe	H	CI	COOPh-4-C1	Ms	Ħ
	Йe	H	C1	COOPh-4-NO2	Ms	Ĥ
	Мe	H	CI	COOCH _z SiMe ₃	Ms	Ħ
15	Йe	H	Cl	COOA8	Ms	Ħ
	Мe	H	C1	COOCH ₂ Y8	Ms	Ħ
	Мe	- H	C1	C00Y9	Ms	H H
	Me	Ħ	C1	C00Y10	Ms	Ħ
	Me		CI	CONHSO ₂ CH ₃	Ms	H
20	Мe	Ħ	CI	CONHSO ₂ CF ₃	Ms	· Ï
	Йe	Ĥ	0Me	C00Y4	Ms.	Ħ
	Me	H H H H	0Me	COOY5	Ns.	Ħ
	Йe	Ħ	0Me	C00Y6	Ms	Ä
	Me	H H	0Me	COOCH _z CH _z C1	Ns .	Ħ
25	Me	Ĥ	0Me	COOCH ₂ CF ₃	Ms	H H
	Me	Ħ	0Me	COOCH _z CCI=CH _z	Ys	Ħ
	Me	Ħ	0Me	COOCH ₂ CH ₂ OCH ₃	iis Ns	H
_	Me	. H	0Me	COOCH 2 SCH 3	Ns	Ħ
30	Me	Ħ	0Me	COOCH ₂ CH ₂ OCH ₂ CH ₂ C1	Ms	Ħ
	Me	Ħ	· OMe	COOCH ₂ CH ₂ OMs	Ms	Ĥ
	Ме	Ħ	0Me	COOCH 2 OCH 2 CH 2 OCH 3	Ms	H H H
	Me	H	OMe	COOCH 2CH 2HE	Ms	Ħ
	Иe	H	0Me	COOCH 2CH 2CN	ži. Žis	Ħ
35	Мe	Ē	0Me	COOCH 2 CH 2 NH CH 3	Ms.	Ħ
	Me	Ħ	0Me	COOCH ₂ CH ₂ OH	Ms	H H H
	Я́е	Ħ	0Me	COOCH ₂ CH ₂ CH ₂ NO ₂	Ms	Ħ
	Иe	Ĥ	0Me	COOY7	zń	Ä
	Иe	Ħ	0Me	COOCH 2 COCH 3	Ms	Ĥ
40	Иe	H	0Me	COOCH ₂ CO ₂ CH ₃	iis ak	. H
	Ме	H	0Me	COOCH (CHa) COOEt	Ms	Ħ
	Ме	H	0Me	COOCH 2CH 2OPh	ăs	· H
	Жe	H	0Me	COOCH 2CH 2OCH 2Ph	Ms	H
45	Иe	H	0Me	COOPh-4-CHá	Ms	H
-	Иe	Ħ	0Me	COOPh-4-CI	Ms	H
	Ме	H	0Me	COOPh-4-NO ₂	zří zří	Ë
	Иe	H	0Me	COOCH ₂ SiMe ₃	Ms	Ħ
_		11		GOOGH STILLE 3	11-2	

5	A	В	X	Y	Z	Q.
	Иe	H	0Me	COOVE	•,,	
	Иe	Ħ	OMe	C00Y8	Ms	нининининин
	Me	H	one OMe	COOCH 2 YB	Ms	H
	Me	H		C00Y9	Ms	H
10	Me	H	0Me	COOYIO	Ms	H
	Me	H	0Me	CONHSO 2CH3	Ms	H
	Et	П.	0Me	CONHSO _z CF ₃	Ms	H
	E E	n n	Йe	C00Y4	Ms	H
	Et	Ħ	Ме	COOY5	Ms	Ĥ
15	Et	H	Мe	C00Y6	Ms	ਸੌ
	Et	H	Ме	COOCH _z CH _z C1	Ms	Ħ
	Et	H	Me	COOCH ₂ CF ₃	Ms	H
	Et	H	Мe	COOCH ₂ CCl=CH ₂	Ms	H.
	Et	H	Me	COOCH 2CH 2OCH 3	Xs.	T T
20	Et	Ħ	Me	COOCH 2 SCH 3	Ms	n n
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	Et	Ħ	Ме	COOCH CH A-	Ms	II.
25	Et		Me	COOCH CH CY	Ms	H
	Et	H	Me	COOCH ₂ CH ₂ CN	Ms	H H H
	Et	4 -	ne Me	COOCH ₂ CH ₂ NHCH ₃	Ms	H
	Et	TI II		COOCH 2CH 2OH	Ms	H
	Et	n T	. Me	COOCH ₂ CH ₂ CH ₂ NO ₂	, Ms	H
30	Ēt	п. П	. Me	C00Y7	Ms	H
	Et	H H H H H	. Ye	COOCH 2 COCH 3	Ms	H
	Et	П. П	Ме	COOCH ₂ CO ₂ CH ₃	2M	H
	Et	П.	Me	COOCH (CH3) COOEt	Ms	H
		H	Ме	COOCH ₂ CH ₂ OPh	Ms.	H.
35	Et	H	Ме	COOCH _z CH _z OCH _z Ph	Ms	\mathbf{H}_{\cdot}
	Et	H	Мe	COOPh-4-CH ₃	Ms	H
	Ēt	H H	Me	COOPh-4-C1	Ms	H:
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₩.	Et	H	Йe	C0078	Ms	H
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-	Et	H	0Me	COOCH ZSCH 3	Ms	H
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10	i-P r	II.		COOCH ₂ CH ₂ OCH ₂ Ph	Ms	H
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	i-Pr	H	Cl	COOCH 2 CH 2 O CH 3	Ms	Ħ
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30	i-Fr	Ħ	Cl	COOCH2CH2OCH2CH2C1	Ms	H
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	i-Pr	H	CI	K3zK3cH3000	Ms	H
35	i-Pr	H	CI	COOCH ₂ CH ₂ NHCH ₃	Ms	H.
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	i-Pr	H	C1	C00Y7	Ms	H
40	i-Pr	H	Cl	COOCH ₂ COCH ₃	Ms	H
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	i-Pr	H	C1	COOCH (CH3) COOEt	Ms.	H
	i-P r	H	CI	COOCH 2CH 2OPh	iis Me	H
	i-P r	H	Cī	COOCH z CH z OCH z Ph	Ms	H
45	ī-P r	H	ČĪ	COOPh-4-CH ₃	en ZK	n n
. •	i-P r	Ħ	ČĪ	COOPh-4-C1		H H
	i-P-	H	CI	COOPh-4-NO ₂	Ms Ma	II U
	i-Pr	Ħ	CI	COOCH ₂ SiMe ₃	Ms Ms	H H
-		·	<u> </u>	coocuso the 3	Ms	п

5	A	В	Х	Y	Z	Q
10	i-P r i-P r i-Pr i-Pr	H H H H	C1 C1 C1 C1 C1	COOY8 COOY9 COOY10 CONHSO2CH3	Ms Ms Ms Ms Ms	H
15	i-Pr i-Pr i-Pr i-Pr i-Pr	H H H H	CI OMe OMe OMe OMe	CONHSO _Z CF ₃ COOY4 COOY5 COOY6	Ms Ms Ms Ms	H H H H H
20	i-Pr i-Pr i-Pr i-Pr	H H H H	OMe OMe OMe OMe OMe	COOCH ₂ CH ₂ CI COOCH ₂ CF ₃ COOCH ₂ CCI=CH ₂ COOCH ₂ CH ₂ OCH ₃ COOCH ₂ SCH ₂ COOCH ₂ CH ₂ CI	Ms Ms Ms Ms	H H H H
25	i-Pr i-Pr i-Pr i-Pr i-Pr i-Pr	H H H	OMe OMe OMe OMe OMe	COOCH ₂ CH ₂ OMs COOCH ₂ OCH ₂ CH ₂ OCH ₃ COOCH ₂ CH ₂ Ms COOCH ₂ CH ₂ CH COOCH ₂ CH ₂ NHCH ₃	Ms Ms Ms Ms Ms	H H H H H
30	i-Pr i-Pr i-Pr i-Pr i-Pr	Н Н Н Н Н	OMe- OMe OMe - OMe OMe OMe	COOCH ₂ CH ₂ OH COOCH ₂ CH ₂ CH ₂ NO ₂ COOY7 COOCH ₂ COCH ₃ COOCH ₂ CO ₂ CH ₃	Ms Ms Ms Ms	H H H
35	i-P r i-P r i-P r i-P r i-P r	Н Н Н Н	one OMe OMe OMe OMe OMe	COOCH (CH ₃) COOE t COOCH ₂ CH ₂ OPh COOCH ₂ CH ₂ OCH ₂ Ph COOPh-4-CH ₃ COOPh-4-CI	Ms Ms Ms Ms Ms	H H H H
40	i-P r i-P r i-P r i-P r i-P r	H H H H	OME OME OME OME OME	COOPH-4-%0z COOCHzSiMez COOCHzY8 COOY9	Ms Ms Ms Ms Ms	H H H H H
45 	i-Pr i-Pr	H H	OMe OMe	COOYIO CONHSO₂CH₂ CONHSO₂CF₃	Ms - Ms Ms	H H H

						
5	<u>A</u>	В	<u> </u>	Y	Z	Ę.
Ū	Me	H	Йe	CON(CH ₃)OCH ₃	¥_	77
	Me		Иe	CONHPh	Ms Ma	Ħ
	Мe	. H H H	Ме	COOCH 2 COC (CH 2) 2	Ms Ms	H H
	Иe	H	. Me	COOCH 2 COPh		П
10	Иe	H	Ме	COOSi (CH ₃) ₃	Ms	H H H H H H
	Me	- Н	Me	COON=C(CH ₃) ₂	Ms	п
	Мe	Ħ	Йe	COOY11	Ms Ms	п
	Me	H	Ме	COOY12		п
	Мe	H	Ме	COOCH 20COC (CH2) 2	Иs Ма	П
15	Мe	H	Ме	COOCH 2 OCOCH 3	Ms Ms	<u>п</u>
	Мe	H H	Мe	COOCH 2CH 2OCH 2CH=CH2	ns Ms	H.
	Me	H	Иe	COOCH 2CH 2OCH 2CH = CH	ns Ms	П 17
	Мe	H	0Me	CON (CH ₃) OCH ₃	en 2K	<u>п</u> В
20	Мe	H	0Me	CONHPh	Ms	H H H
	Мe	H	0Me	COOCH ₂ COC (CH ₃) ₃	ns Ms	H .
	Мe	H	0Me	COOCH ₂ COPh	ns Ms	II.
	Йe	H	0Me	COOSi (CH ₃) 3	ns Ms	H ·
	Иe	H	0Me	COON=C (CH ₃) ₂	Ms	H
25	Йe	H	0Me	COOY11	iis Ns	H .
	Me	H	0Me	C00Y12	iis Ns	H
	Me	H	0Me	COOCH 20COC (CH3) 3	Ms	H
	Мe	H	0Me	COOCH 2 OCOCH 3	Ms	H H
30	Иe	. Н	0Me	COOCH & CH & OCH & CH = CH &	Ms	Ħ
	Мe	H	0Me	COOCH _z CH ₂ OCH _z C = CH	Ms	Ħ
	Иe	H	CI	CON (CH3) OCH3	Ms	H
	Мe	H	CI	CONHPH	Ms	Ħ ·
	Ме	H	Cl	COOCH ₂ COC(CH ₃) ₃	Ms	H.
35	Ме	Ħ	CI	COOCH ₂ COPh	Ms	H -
	Me	H	CI •	COOSi(CH ₃) ₃	Ms	ਸ਼ੌ
	Me T	Ħ	CI	COON=C (CH ₃) ₂	Ms	H H H H
	Ме	Ħ	CI	C00Y11	Ms	Ĥ
40	Me	H	Cl	C00Y12	Ms	Ħ
+0	Me	H	CI	C00CH=0C0C(CH3) 3	Ms	Ĥ
	Ме	H	CI	COOCH _z OCOCH _z	Ms	H
	Me u_	H	CI	COOCH ₂ CH ₂ OCH ₂ CH=CH ₂	Ms .	H
	Ме	H	CI	COOCH 2CH 2OCH 2C = CH	Ms	H H
45	Et	H	Me	CON (CH ₃) OCH ₃	Ms	H ,
	Et	H	Йe	CONHPH	Ms	H
	Et .	H	Me	COOCH ₂ COC (CH ₃) ₃	Ms	H
_	Et	H	Ме	COOCH _z COPh	Ms	H
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_				•		
•	A	В	X	Y	Z	Q
5	Et	H	Ме	C00Si(CH ₃) ₃	¥_	
	Et		Йe	$COON=C(CH_3)_2$	Ms Ms	Ħ
-	Et	H H H H	Me	COOY11		H
	Et	Ħ	Me	C00Y12	Ms	H
10	Ēt	Ħ	Иe	COOCH ₂ OCOC (CH ₃) ₂	Иs	H
	Et	Ħ	Me	COOCH OCCCH	Ms	H
	Et	n T	Ме	COOCH CH OCH CH CH	Ms	H
	Et	Ħ	Me	COOCH CH CON CHECH 2	Мs	H H H
	Et	Ĥ	ome	COOCH ₂ CH ₂ CH ₂ C=CH	Жs	<u>H</u>
15	Et	H		CON (CH ₃) OCH ₃	Ms	H
	Et	H	OMe	CONHPH	Ms	H
	Eŧ	11 17	0Me	COOCH ₂ COC (CH ₃) ₃	Ms	H H H
	Et	H	0Me	COOCH ₂ COPh	Ms	Н .
	Et	Ω 17	0Me	COOSI (CH ₃) ₃	Ms	H
20		<u>n</u>	0Me	COON=C (CH ₃) ₂	Ms	H
	Et	<u> </u>	0Me	C00Y11	zří	\mathbf{H}^{-}
	Et	Ħ	0Me	C00Y12	Ms	H
•	Et	H H H H H H	0Me	COOCH ₂ OCOC (CH ₃) ₃	Ms	· H · - ·
	Et	H	0Me	COOCH 2 OCOCH 3	Ms	H -
25	Et	H	0Me	COOCH zCH zOCH zCH=CH z	Ms	H
	Et	H	0Me	COOCH ₂ CH ₂ OCH ₂ C≡CH	Ms	H
	Et	H	CI	CON (CH3) OCH3	zK	H
	Et	H	CI	CONHPh	Ms	H
30	Et	H _.	C1	- COOCH 2 COC (CH3) 3	Иs	H
00	Et	H.	CI	COOCH z COPh	Ms	H
	Et	H H H H H	CI	COOSi(CH ₃) ₃	Ms	H
	Et	H	C1	$COON=C(CH_3)_2$	Ms	H ·
	Et	H	CI	COOY11	Ms	$ar{\mathtt{H}}$.
35	Et	H	Cl	C00Y12	Мs	H .
	Et	H	CI	COOCH ₂ OCOC (CH ₃) ₃	Ms	H
	Et	H	Cl	COOCH ₂ OCOCH ₃	Ms	H
	Et	H	C1	COOCH2CH2OCH2CH=CH2	Ms	H H H H
	Εt	Н -	CI	COOCH ₂ CH ₂ OCH ₂ C≡CH	Ms	Ħ
40	i-P r	H	Ме	CON (CH ₃) OCH ₃	Ms	H
	i-Pr	H	Иe	CONHPh	Ms	Ĥ
	i-Pr	H	Мe	COOCH ₂ COC (CH ₃) ₃	Ms.	H
	i-P r	H	Me	COOCH = COPH	Ms	H
	i-Pr	H	Иe	COOSi (CH ₃) ₃	Ms	H .
45	i-Pr	H	Иe	COON=C(CH ₃) ₂	Ms	H H
	i-Pr	Ĥ	Me	COOY11	Ms	H
	i-Pr	Ħ	Ме	C00Y12	Ms	H
				COULTE	113	11

<u>A</u>	В	X	Y	Z	Q
i-Pr	H	Мe	COOCH = OCOC (CH =) =	Ms	H
i-P r	H	Иe	COOCH 2OCOCH3	Ms	
i-Pr	H H	Мe	CH2=H3cH30cH3cH3cH=cHz	Ms	Ħ
i-P -	H	Иe	HO=OcHocHocHocHocHocHocHocHocHocHocHocHocHoc	Иs	Ħ
i-Pr	H	0Me	CON (CH ₂) OCH ₃	Ms	Ħ
i-Pr	H	0Me	CONHPh	Ms	
i-Pr	H	0Me	COOCH 2 COC (CH 2) 2	Ms	я
i-Pr	H	0Me	COOCHaCOPh	Ms	Ħ
i-Pr	H	0Me	COOSi(CH ₃) ₂	Ms.	Ħ
i-Pr	H	0Me	COON=C(CH ₃) ₂	Ms	Ħ
i-Pr	H	0Me	C00Y11	Ms	H
i-Pr	H H	0Me	CO0Y12	aK	H H H H
i-Pr	H	0Me	COOCH 2 OCOC (CH3) 3	Ms	Ħ
i-Pr	H	0Me	COOCH 20COCH3	Ms	Ħ
i-Pr	H	0Me	COOCH2CH2OCH2CH=CH2	Ms	H
i-P r	H	0Me	$COOCH_2CH_2OCH_2C = CH$	Ms	H
i-Pr	H	C1	CON (CH ₃) OCH ₃	Жs	H H ·H
i-Pr	. Н	C1	CONHPh	Ms ·	·H
i-Pr	H	C1	COOCH ₂ COC (CH ₃) ₃	Жs	H
i-Pr	H	Cl	COOCH ₂ COPh	Иs	H H
i-Pr	H H	CI	COOSi(CH ₃) ₃	Ms	H
i-Pr	H	C1	COON=C(CH ₃) ₂	Ms .	Н -
i-Pr	H H	CI	COOY11	Иs	- Н
i-Pr	H	· CI	C00Y12	Ms	. Н.
i-Pr	H	C1	COOCH ₂ OCOC (CH ₂) ₃	Ms	H
i-P r	H.	C1	EHOOOC HOOO	Ms	H
i-Pr	H	CI	COOCH ₂ CH ₂ OCH ₂ CH=CH ₂	2K	H
i-Pr	H	CI	$COOCH_2CH_2OCH_2C \equiv CH$	zľs	H

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5	<u>A</u>	В	X	Y	Z	G.
·	Йe	H	Ме	CH ₂ OH	(4	
	Me		Ме	CH _z OMe	Ms	Н Н Н Н
	Me	Ĥ	Ме	CH ₂ OMe	Ms	H
	Мe	Ħ	Ме	CH _z OMe	CI	H
10	Мe	$\widetilde{\mathbf{H}}$	Иe	CH ₂ OMe	MeS	H
	Иe	Ħ	Me	CH = OMe	MeSO	H
-	Мe	Ħ	Ме	CH _z OMe	Ms	QI
	Иe	Ħ	Иe	CH ₂ OHe	MeS	Q1
	Мe	Ĥ	Ме	CH ON-	MeSO	91
15	Me	Ħ	Ме	CH₂OMe	Ms	92 92 92
	Мe	H .	йe	CH ₂ OHe	MeS	92
	Me	Ħ	Me	CH_OMe	MeS0	Q 2
	Me	H H	Me	CH_OMe	Ms	Q3
20	Me	Ħ	Иe	CH ₂ OMe	MeS	Q3
	Me	Ĥ	ne Me	CH zOMe	MeS0	g3
	Me	- H	Me	CH 20Me	Ms	Q4
	Me	Ħ	ne Me	CH 20Me	Ms	9 5
	Ме	Ħ	ne Me	CH ₂ OMe	Ms Ms	96
25	Йe	H	ne Me	CH _z OMe	Ms	Q 7
	Мe	Ħ	ne Me	CH ₂ OMe	Ms	€8
	Me	Ħ	ие Ие	CH _z OMe	Ms	€9
	Йe	Ħ	ne Me	CH ₂ OEt	Ms	H
	Me	Ħ	Ме	CH ₂ OEt	CI_	H
30	Иe	Ĥ	Me	CH ₂ OEt	MeS	H ·
	Мe	Ħ	. Ne Me	CH_OE ÷	MeS0	H
	Me	H H H	Me	CH ₂ OE t	Ms	Q 1
	Me	Ħ	Иe	CH ₂ OE t	MeS	Q1
. 35	Мe	H	Me	CH ₂ OE t	MeS0	Q 1
	Me	Ħ	Ме	CH ₂ OEt	Ms	Q2
	Me	Ĥ	Me	CH ₂ OE±	MeS	92
	Me	Ħ	Ме	CH ₂ OEt	MeSO	Q2
	Me	Ħ	Ме	CH ₂ OEt	Ms_	QЗ
40	Мe	Ä	Me	CH ₂ OE t	MeS	дЗ
	Me	Ħ	ne Me	CH ₂ OEt	MeS0	Q3
	йe			CH ₂ OEt	Ms	Q4
	Me	H H	Me Me	CH ₂ OE t	ils.	Q 5
	Ме	H		CH ₂ OE t	Мs	96
45	Me	H	Me	CH ₂ OE t	Ms	97
	Иe	H	Me Me	CH ₂ OE t	Ms	QS
	Ме	H	Me Me	CH ₂ OEt	Ms	6 9
		ш	Me	CH=OPr-i	Ms	H .

_	A	В	X	Y	Z	Q
5	Иe	H	Не	CH _z OPr-i	CI	is .
	Me	$ar{\mathtt{H}}$	Иe	CH _z OP _T -i	MeS	H
	Иe	Ħ	Ме	CH ₂ OPr-i	MeSO	H H
	Me	H H	Ме	CH ₂ OPr-i	Ms	п С
10	Ме	Ĥ	Ме	CH ₂ OPr-i	ns Ms	Q 1
	Me		Ме	CH _z OP _r -i		92
	Me	н н н н	lie	CH ₂ OPr-n	Ms Y-	93
	Йe	Ħ	Ме	CH ₂ OPr-n	Ms Cl	п
	Ме	Ħ	Me	CH ₂ OPr-a	MeS	п
15	Ме	H	Иe	CH ₂ OPr-n		П.
	Me	Ħ	йe	$CH_2OCH = CH_2$	NeSO	n v
	Ме	H H	Иe	$CH_2OCH = CH_2$	Ms Cl	<u>п</u>
	Me	Ħ	Иe	$\begin{array}{ccc} \text{CH}_2\text{OCH} & -\text{CH}_2\\ \text{CH}_2\text{OCH} & -\text{CH}_2 \end{array}$	MeS	<u>п</u>
20	Ме	ਸ ਸ	Иe	$CH_2OCH = CH_2$		<u>п</u>
20	Me	H H H	Ме	CH ₂ OCH ₂ CH=CH ₂	MeSO	H H H H H H H H H H H
	Иe	H	Ме	$CH_2OCH_2CH = CH_2$ $CH_2OCH_2CH = CH_2$	zĶ	11
	Иe	H	Me	$CH_2OCH_2CH = CH_2$ $CH_2OCH_2CH = CH_2$	CI	H H
	Ме	H	ne Me	$CH_2OCH_2CH = CH_2$ $CH_2OCH_2CH = CH_2$	MeS	11 17
25	Йe	Ħ	ile ile	$CH_2OCH_2C = CH$	MeS0	H
	Me	Ħ	Ме		Ms	H
	Иe	H	ne Me	$CH_2OCH_2C \equiv CH$ $CH_2OCH_2C \equiv CH$	C1	H
	Me	H	ие		MeS	H
	Йe	H	Me	CH ₂ OCH ₂ C ≡CH CH ₂ OCH ₂ CH ₂ C1	MeSO	H
30	Иe	Ħ	Me	CH ₂ OCH ₂ CH ₂ Cl	Ms CI	H H
	Me	H	Ме	CH ₂ OCH ₂ CH ₂ C1	CI M-C	П tr
	Me	H	Me	CA OCA CA CA	MeS	H
	Ме	H	Me	CH2OCH2CH2C1 CH2OCH2CH2Br	MeSO	H
35	Йe	H	Ме	CH ₂ OCH ₂ CH ₂ CN	Ms Ms	H H
33	Иe	H	Me	CH ₂ OAm-n	ns Ms	H
	Йe	Ħ	Ме	CH ₂ 0-Y5	ns Ms	H
	Йe	Ħ	Ме	CHMeOH	ns Ms	H
	Me	Ħ	Me	CHMeONe	ns Ms	H
40	Ме	H	Иe	Cimeone Cimeone		H
	Ме	H	иe	синеоне СНМеОМе	C1	n H
	Иe	H	ne Me	Chrieone CHMeOMe	MeS	п Н
	Ме	H	rie Me	симеоме Симеоме	MeSO	п Q1
	Ме	H	ме Ме	Chneone CHMeOMe	. უs ო-	Uo. ÆT
45	Me	H	ne Me		Ms V-	92 93
	Ме	H	ne Me	CHMeOMe CHMeOEt	Ms Ma	H H
	Иe	n H	ne Me	CHMeOEt	Ms CI	n H
			ne .	CITIEUE E	GI.	<u> </u>

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5	<u>A</u>	E	X	Y	Z	Ę.
	Мe	H H H H	Иe	CHMeOEt	MeS	Ħ
	Йe	H	Мe	CHMeOEt	MeSO	H
	Мe	H	Иe	CHMe0Et	iis As	<u>ü</u> l
10	Me	H	Йe	CHMe0E t	Ms	92
	Мe		Иe	CHMeOE t	ns Ms	Q3
	Me	H	Ме	CHMeOPr-i	Ms	a an
	Me	H H H	Ме	CHMeOPr-i	C1	II.
	Жe	H	Мe	CHMeOPr-i	MeS	II. IF
15	Мe	H	Йe	CHMeOPr-i	MeSO	П U
	Мe	H	Me	CHMeOPr-n	Ms	n u
	Мe	H	Me	CHMeOCH = CH ₂	zn ZK	Ω.
	Мe	H	Me	CHMeOCH = CH ₂	en 2K	II U
	Йe	H	Me	CHMeOCH = CH = CH =	Ms	п.
20	Йe	H	Ме	CHMeOCH ₂ C≡CH	Ms	II.
	Мe	H	Ме	CHMeOCH ₂ CH ₂ Cl	Ms 2K	Н Н Н Н Н Н Н Н Н Н Н Н Н Н Н Н Н Н Н
	Мe	нннннннн	Me .	CHMeO-Y5	Ms	H
	Мe	H	Иe	CMe _z OH	Ms	. II
25	Ме	H	Ме	CMe z OMe	ZK ZK	H H
	Мe	H	Иe	CMe z OMe	CI	n 11
	Мe	H	Ме	CMe _z 0Me	MeS	H
	Мe	H	Ие	CMe = OMe	MeS0	H
	Me	H	Йe	CMez0Et	Ms	H
30	Йe	H	Иe	- CMe=OEt	Ċī	H
	Мe	<u>H</u> -	Иe	CMe _z 0Et	MeS	Ħ
	. Me	H	Мe	CMez0Et	MeSO	Ħ
	Ме	Н Н Н Н	Иe	CMe _z OPr-i	Ms	Ĥ
35	Иe	<u>H</u>	Ме	CH ₂ CH ₂ OMe	Ms	Ħ
33	Me	Ħ	Иe	CH ₂ CH ₂ OMe	Cl	H H H H H H H H H H H H H H H H H H H
	Me .	H H H	Йe	CH_zCH_zOMe	MeS	Ĥ
	Йe	H	Ме	CH _z CH _z OMe	MeSO	Ħ
	Иe	H	Ме	CH ₂ CH ₂ OE t	Ms	H
40	Ме	H	Йe	CH ₂ CH ₂ OEt	Cl	H
	Ме	H	Ме	CH ₂ CH ₂ OE t	MeS	H
	Иe	H	Ме	CH _z CH _z OE t	MeSO	H
	йe	H H	Me	CHzCHzOPr-i	Ms	H
	Ме М-	H	Иe	CH _z CH _z OP _T -i	Cl	H
<i>4</i> 5	Иe	H H	Йe	CH _z CH ₂ OP _T -i	MeS	H
	Ме	H	Me	CHzCHzOPr-i	MeSO	H -
	Me	H	Йe	CHE tOH	Ms	H H H H H
	Иe	H	Ме	CHE tOMe	Ms	H

	A	В	X	Y	Z	Q.
5	Иe	Н	Ме	CHEtOMe	Cl	ע
	Me	Ħ	Ме	CHEtOMe	MeS	II.
	Me	Ĥ	Ме	CHEtOMe	MeSO	H H
	Мe	Ħ	Иe	CHE ±0E ±	Ms	H .
10	Me	H H H H	Ме	CHE tOPT - i	ži. Ži	ä
	Мe	Ħ	Ме	CH2OCH2CH2OMe	Ms	n n
	Йe	Ħ	Ме	CH ₂ OCH ₂ CH ₂ OMe	CI	ä
	Йe	Ħ	Ме	CH2OCH2CH2OMe	MeS	п П
	Мe	Ħ	Ме	CH ₂ OCH ₂ CH ₂ OMe	MeSO	H H
15	Me	Ĥ	Ме	CH ₂ OCH ₂ CH ₂ OE t	Ms	H H
	Me	Ħ	Ме	CHMeOCH zCH zOMe	Ms	H H
	Мe	Ħ	Иe	CH ₂ 0-Y8	Ms	H
	Мe	Ħ	Иe	CH ₂ 0-Y9	zK zK	H II
20	Me	Ĥ	Me	CH ₂ 0-Y10	Ms.	ä
	Me	H	Йe	CHMeO-Y8	Ms .	Ħ
	Me	Ĥ	Иe	CAMe0-19	Ns	Ħ
	Me	Ħ	Йe	CHMe0-Y10	Ms	H
	Мe	Ĥ	Йe	CH ₂ 0-Y13	Ms	Ħ
25	Мe	H H	Йe	CHMeO-Y13	Ms	Ħ
	Me	Ħ	Йe	CH ₂ NHMe	Ms	Ħ
	Мe	Ĥ	Йe	CHziMez	Ms.	Ħ.
	Me	H	Ме	CH ₂ NE tMe	ZK	Ħ
30	Me -	Ħ	Йe	CHzNEtz	en en	Ħ
30	Me	H	Me	CH2-Y14	Ms	Ħ
	Мe	H H H	Мe	CHMeNMe _z	Ms	Ħ
	Me	H	Ме	CH ₂ CH ₂ NMe ₂	Ms	Ä
	Нe	H	Ме	CHzOCHzPh	Ms	Ħ
35	Мe	H	Ме	CHMeOCH ₂ Ph	ZK.	H
	Me	H	Me	CH 20CH 2CO 2Me	гK	Ĥ
	Мe	H	Иe	CH ₂ OCH ₂ CO ₂ Et	Ms	Ħ
	Иe	H	Ме	CH _z OCHMeCO _z Me	Ms	H .
	Мe	Ħ	Иe	CHZCN	Ms	H
40	Me	H	Ме	CHMeCN	Ms	H
	Мe	H	Me	CH _z S∦e	Ms	H
	Мe	H	Йe	CH _z SMe	Cl	ннининининининининининининининининининин
	Мe	H	Me	CH ₂ SMe	MeS	H
45	Ме .	H	Йe	CH _z SMe	MeS0	H
-	Me	H	Me	CH ₂ SE t	Ms	H
	Me	H	Йe	CH _z SEt	C1	H ·
	Мe	H	Мe	CH ₂ SEt	MeS	H

5	A	В	Х	Y	\overline{z}	
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15	Мe	$\vec{\mathbf{H}}$	Иe	CH ₂ SO ₂ Et CH ₂ SO ₂ Et	Ms Ci	, H
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20	Йe	Ħ	Me	CHMeSO _z Me	Ms Ms	H
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25	Мe	Ħ	Мe	CH ₂ OCOE t	Ms Ms	H
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30	Et Et	H T	Me . V-	CH ₂ OH .	Ms	H
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35	Et Et	H H	Me Ma	CH ₂ OMe	MeSO	H
50	Et	H	Me Me	CHzOMe CH2OMe	Ms .	Q I
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	Et Et	H H	Me Y-	CH z OMe	zK	92
40	Et	H	Ме Ме	CH₂OMe CH₂OMe	MeS	Q2
	Et	H	Me	CH ₂ OMe	MeSO Ms	92
	Et Et	Н	Мe	CH₂0Me	MeS	93 93 93
45 .	Et Et	H H	Ие Ие	CH ₂ OMe CH ₂ OMe	MeSO	g3
~ .	Et	H	Ме	CH ₂ OMe	Ms Ms	94 95
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		<u> </u>	Me	CH _z OMe	Ms	97

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5	Et	H	Me	CH ₂ OMe	· Ms	98
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15	Et	H	Йe	CH ₂ OE t	neso Ms	Q1
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	Et	Ĥ	Иe	CH ₂ OEt	Ms Ns	92 92 92 93
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20	Et	Ĥ	Ме	CH ₂ OEt	NeSO	Q3
	Et	Ĥ	Йe	CH ₂ OEt	Ms	Q4
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	Et	ннннннннннн	Йe	CH _z OEt	. Ms	6 6
25	Et	Ī	Me	CH ₂ OEt	en en	Q7
	Et	Ħ	Ме	CH _z OEt	Ms	68
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35	Et	H	Мe	CH ₂ OPT-i	Ms	Q 3
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40	Et	H	Йe	$CH_2OCH = CH_2$	Ms	H H
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45	Et	Ĥ	Иe	$CH_zOCH_zCH = CH_z$	Cl	H
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10	Et	H	Ме	CH=OCH=CH=C1	Ms	Ω tr
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45	Et	H	Йe	CH20CH2CH2Br	ocen 2M	<u>п</u>
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25	Et	Η	Иe ·	CHMeOMe	Ms	Q 2
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30	Et Et	H	Йe	CHMeOEt	MeS	Ĥ
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	Εŧ	H	Иe	CHMeOEt	Ms	92
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35	Et.	H	Йe	CHMeOPr-i	Ms	
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	Et	II.	Йe	CHMeOPr-i	MeSO	H
40	Et	II.	Иe	CHMeOPr-n	Ms.	H
40	Et	H	Ме	$CHMeOCH = CH_2$	Ms	H
	Et	H	Ме	CHMeOCH = CH =	Ms	H
	Et	H	Йe	CHMeOCHzCH = CHz	Ms	H H
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45	Et	H	Me	CHMeOCH ₂ CH ₂ C1	Ms	H
	Et	H H	Me Y-	CHMe0-Y5	Ms	H
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35	Εt	Ħ	Иe	CH ₂ OCH ₂ CH ₂ OMe	ក់s ម	H
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40	Εt	H	Мe	CHMeOCH z CH z OMe	Ms	H
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45	Et Et	H	Йe	CHMeO-Y8	Ms	H H
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15	Et Et Et Et	H H H	Me Me Me Me	CHMeNMez CHzCHzNMez CHzOCHzPh CHMeOCHzPh	Ns Ns Ns Ns	H H H H
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25	Ettt Ett Ett Ett	Н Н Н Н Н	Me Me Me Me	CH2SMe CH2SMe CH2SMe CH2SMe CH2SEt	Ms C1 MeS MeSO Ms	н н н н
30	EEEEEEE	H H H -	Me Me Me Me Me	CH ₂ SE t CH ₂ SE t CH ₂ SE t CH ₂ SOMe CH ₂ SOE t	CI MeS MeSO Ms	H H H H H
35	Et Et	H H H H	Me Me Me Me Me	CH ₂ SO ₂ Me CH ₂ SO ₂ Me CH ₂ SO ₂ Me CH ₂ SO ₂ Me CH ₂ SO ₂ Et	Ms Ms C1 MeS MeSO	H H H
40	E t t t t E E E E	H H H H	Me Me Me Me Me	CH _z SO _z Et CH _z SO _z Et CH _z SO _z Et CHMeSMe	Ms CI MeS MeSO Ms	H H H H H
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Et H Me CH2OSO2Me Ms H Et H Me CH2OSO2Me Ms H Fri H Me CH2OMe Ms H Pri H Me CH2OMe Ms H Pri H Me CH2OMe MeS Q1 Pri H Me CH2OMe MeS Q1 Pri H Me CH2OMe MeS Q1 Pri H Me CH2OMe MeS Q2 Pri H Me CH2OMe MeS Q3	Z Q	Z	Y	X	Е	A	
Et H Me CH20S02Me Ns H Et H Me CH20S02Et Ms H Et H Me CH20S02He Ms H Et H Me CH20S02He Ms H Fr-i H Me CH20He Ms H Pr-i H Me CH20Me C1 H Pr-i H Me CH20Me MeS H Pr-i H Me CH20Me MeS H Pr-i H Me CH20Me MeS U1 Pr-i H Me CH20Me MeS U2 Pr-i H Me CH20Me MeS U3 Pr-i H Me CH20Me MeS U3 Pr-i H Me CH20Me MeS U3	de H	Ms	CHMEOCOME	Иe	Я	F÷	5
Et H Me CH ₂ OSO ₂ Et Ms H Et H Me CHMeOSO ₂ He Ms H Pr-i H Me CH ₂ OMe Ms H Pr-i H Me CH ₂ OMe C1 H Pr-i H Me CH ₂ OMe MeS H Pr-i H Me CH ₂ OMe MeSO H Pr-i H Me CH ₂ OMe MeSO Q1 Pr-i H Me CH ₂ OMe MeSO Q2 Pr-i H Me CH ₂ OMe MeSO Q2	15 H				Ħ	Εt	
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P_{r-i} H He CH_z OMe Ms Q9			CH _z OMe		H		30
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40 Pr-i H Me CH ₂ OEt MeS Q2 Pr-i H Me CH ₂ OEt MeSO Q2							
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	Pr-i	H	Мe	CH _z OEt	Ms	68
	Pr-i	H	Иe	CH ₂ OEt	Ms	ρĝ
10	Pr-i	H	Мe	CH₂OPr-i	Ms	ਜੌ
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15	-Pr-i	Ħ	Йe	CH _z OPr-i	Ms	Q2
	Pr-i	H	Мe	CH ₂ OPr-i	Ms	Q3
	Pr-i	H	Иe	CH ₂ OPr-a	Ms	
	Pr-i	H	Me	CH ₂ OPr-a	CI	H
	Pr-i	H	Me	CH ₂ OPr-n	MeS	H
20	Pr-i	H	Ме	CH ₂ OPT-n	MeSO	H H H H
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	Pr-i	H	Ме	$CH_zOCH = CH_z$	CI	Ħ
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25	Pr-i	H	Иe	$CH_2OCH = CH_2$	MeS0	H
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35	Pr-i	H	Иe	CH ₂ OCH ₂ CH ₂ CI	CI	п Н
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40	Pr-i	H	Йe	CH ₂ OAm-n	Ms	Ĥ
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45	Pr-i	H	Йe	CHMeOMe	CI	H
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5	Pr-i	H	Йe	CHMeOMe	Ms	92
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10	Pr-i	H	Me	CHMeOE t	MeS	H H H
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15	Pr-i	Ħ	Мe	CHMeOEt	Мs	Q3
75	Pr-i	Ĥ	Йe	CHMeOPr-i	Ms	H
	Pr-i	Ħ	Йe	CHMeOPr-i	Cl	H
	Pr-i	H	Мe	CHMeOPr-i	MeS	\mathbf{H}_{-}
	Pr-i	H	Мe	CHMeOPr-i	MeS0	H
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25	Pr-i	Ħ	Me	CHMeOCH ₂ CH ₂ C1	2K	. H
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30	P r -i	Ħ	' Me	CMe ₂ OMe	C1	H
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	Pr-i	H	Мe	CMezOEt	CI	H
35	Pr-i	Ĥ	Ме	CMezOEt	MeS	H H H H H H
	Pr-i	Ħ	Йe	CMezOEt	MeSO	H
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	Pr-i	Ħ	Иe	CH ₂ CH ₂ OMe	Ms	H
	Pr-i	Ħ	Йe	CH ₂ CH ₂ OMe	Cl	H
40	Pr-i	H	Йe	CH zCH zOMe	MeS	H
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15	Pr-i Pr-i Pr-i Pr-i	H H H	Me Me Me Me Me	CHE tOMe CHE tOE t CHE tOPT - i CH 2OCH 2CH 2OMe CH 2OCH 2CH 2OMe	MeSO Ms Ms Ms	H H
20	Pr-i Pr-i Pr-i Pr-i Pr-i	H H H	Me Ne Me Me	CHzOCHzCHzOMe CHzOCHzCHzOMe CHzOCHzCHzOEt CHMeOCHzCHzOMe	C1 MeS MeSO Ms Ms	H H H H
25	Pr-i Pr-i Pr-i Pr-i	H H H H	Me Me Me Me Me	CH ₂ O-Y8 CH ₂ O-Y9 CH ₂ O-Y1O CHMeO-Y8 CHMeO-Y9	Ms Ms Ms Ms	H H H
30	Pr-i Pr-i Pr-i Pr-i Pr-i	H H H H	Me Me Me Me Me	CHMeO-Y10 CHzO-Y13 CHMeO-Y13 CHzNHMe CHzNMez	Ms Ms Ms Ms Ms	H H H H
35	Pr-i Pr-i Pr-i Pr-i Pr-i	H H H H	Me Me Me Me Me Me	Chanea Chanethe Chaneta Cha-Y14 Chmenmea Chachanmea	Ms Ms Ms Ms	H H H H
40	Pr-i Pr-i Pr-i Pr-i Pr-i	H H H H	Me Me Me Me	CHzOCHzPh CHMeOCHzPh CHzOCHzCOzMe CHzOCHzCOzEt	Ms Ms Ms Ms Ms	H H H H H
45	Pr-i Pr-i Pr-i Pr-i Pr-i	H H H H	Me Me Me Me Me Me	CH 20CHMeCO 2Me CH 2CN CHMeCN CH 2SMe CH 2SMe CH 2SMe CH 2SMe	Ms Ms Ms Ms C1 MeS	Н Н Н Н Н .

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5	Pr-i	H	Йe	CH ₂ SMe	ИeSO	Н -
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10	Pr-i	H	Ме	CH ₂ SE t	MeS0	Ĥ
	Pr-i	H H	Мe	CH ₂ SOMe	Ms	H
	Pr-i	H	Мe	CH ₂ SOE t	Ms	Ħ
	P . -i	H	Иe	CH ₂ SO ₂ Me	Ms.	Ħ
	Pr-i	H H	Мe	CH _z SO _z Me	Cl	Ħ
15	Pr-i	H	Ме	CH _z SO _z Me	MeS	Ħ
	Pr-i	H	Ме	CH _z SO _z Me	MeSO	H
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	Pr-i	H	Мe	CH ₂ SO ₂ Et	CI	H
20	Pr-i	H H	Ме	CH _z SO _z Et	MeS	H
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	Pr-i	H	Йe	CHMeSMe CHMeSMe	Иs	H
	Pr-i	Н	Иe	CHMeSEt	Ms	H
	Pr-i	H	Мe	CHMeSOzMe	Ms	H
25	Pr-i	H	Ме	CHMeSO _z Et	Ms	H
	Pr-i	Ħ	Иe	CH2SCH2CH2OMe	Ms	H
	Pr-i	H	Мe	CH _z OCOMe	Ms	H
	Pr-i	H	Ме	CH ₂ OCOE t	Ms	H
	P - -i	H	Мe	CHMe0C0Me	Ms	Ħ
30	Pr-i	H	Ме	CH2OSO2Me	Ms	H
	Pr-i	H	Мe	CH2OSOzEt	ZК	H
	Pr-i	H	Me	CHMe0S0₂Me	Ms .	Н

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5	<u> </u>	B	X	Y	Z	Q.
10	Me Me Me Me Me Me	H H H H H H H H H H H H H H H H H H H	C1 C1 C1 C1 C1 C1	CH ₂ OH CH ₂ OMe CH ₂ OMe CH ₂ OMe CH ₂ OMe CH ₂ OMe CH ₂ OMe	Ms Ms C1 MeS MeSC Ms	H H H H
15	Me Me Me Me	H H H H	CI CI CI CI	CH ₂ OMe CH ₂ OMe CH ₂ OMe CH ₂ OMe	MeS MeSO Ms MeS	91 91 92 92 92
20	Me Me Me Me	H H	CI CI CI C1	CHzOMe CHzOMe CHzOMe CHzOMe	MeSO Ms MeS MeSO Ms	93 93 93 94
25	Me Me Me Me Me	H H H H H H H H	C1 C1 C1 C1	CHzOMe CHzOMe CHzOMe CHzOMe CHzOMe	Ms Ms Ms Ms Hs	95 96 97 98 99
30	Me Me Me Me	H H	C1 C1 C1 C1 C1	CH ₂ OE t . CH ₂ OE t CH ₂ OE t CH ₂ OE t CH ₂ OE t	Ms CI MeS MeSO Ms	01 H H H G9
35	Me Me Me Me Me	H H H H	C1 C1 C1 C1 C1	CH _z OEt CH _z OEt CH _z OEt CH _z OEt CH _z OEt	MeS MeSO Ms MeS MeSO	91 91 92 92 92 93
40	Me Me Me Me Me	H H H H	C1 C1 C1 C1	CHzOEt CHzOEt CHzOEt CHzOEt	Ms MeS MeSO Ms	93 93 94
45	Me Me Me Me Me	и Н Н Н Н	C1 C1 C1 C1 C1 C1	CH20Et CH20Et CH20Et CH20Et CH20Et	Ms Ms Ms Ms	95 96 97 98 99
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10	Me Me	H	C1	CH _z OPr-i	Ns V-	Q1
		H	C1	CH ₂ OPr-i	, ye	Q2
	Иe	H H	C1	CH ₂ OPr-i	' Ms	Q 3
	Me Me	п Н	C1	CH ₂ OPr-a	Ms Cl	n
	ne Me	п Я	CI Cl	CH₂OPr-n CH₂OPr-n	MeS	П U
15	Me	H	CI	CH ₂ OPr-n	MeSO	<u></u>
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25	lie	H	Cl	CH _z OCH _z C ≡CH	Ms	H
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	Иe	H	· · · CI	$CH_{2}OCH_{2}C \equiv CH$	MeSO	H
30	lle	H H H	CI	CHzOCHzCHzCI	Ms	H
	ile i	H	C1	CH 20CH 2CH 2Cl	C1	H
	ile	H	C1	CH 2OCH 2CH 2C1	MeS	H
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05	Me	n u	C1	CH ₂ OCH ₂ CH ₂ Br	Ms V-	H
35	Me Me	П U	CI Cl	CH ₂ OCH ₂ CH ₂ CN	ns H-	n u
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	Me	H	C1	CHMeOH	ns Ms	11
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40	Ме	H	C1	СНМеОМе	CI	Ħ
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45	Ме	H	CI	СНМеОМе	Ms	Q2
. •	Me	Ĥ	Ci	CHMe0Me	Ms	Q 3
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	Мe	H	C1	CHMeOEt	Ms	92
10	Мe	H	Cl	CHMeOEt	Ms	<u> </u>
	Me	H	C1	CHMeOPr-i	Ms	ਸ
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15	Мe	H	C1	CHMeOP:-i	MeS0	H
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20	Me .	H	Cl	CHMeOCH ₂ C≡CH	Ms	Ĥ
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25	Me	H H	C1	CMe ₂ OMe	Cl	H
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30	Йe	. <u>H</u> .	Cl	CMe ₂ 0Et	C1	H
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35	Ме	H	CI	CH ₂ CH ₂ OMe	C1	$\mathbf{H}_{\perp\perp}$
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40	Me Me	H	C1	CH ₂ CH ₂ OEt	Cl	H
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45	rie Me	H	CI	CH ₂ CH ₂ OPr-i	MeS	H.
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10	Me	H H	C1	CHE tOPr-i	Ms	Ä
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15	Me	n Tr	C1	CH ₂ OCH ₂ CH ₂ OEt	Ms	Ĥ
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20	ne Ne	. Н	CI	CHMe0-Y8	Ms	Ħ
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25	Me	H	CI	CHMe0-Y13	zr. zr	ннинининнинниннинниннинниннинн
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15	Ме	H	CI		Cl	H
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30	Et	H . H	CI	CH ≥OH	Ms	H
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	Et	H	Cl	CH₂0He	MeS	H
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35	Et.	H	Cl	CH _z OMe	Ms	Q1
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	Et	H	CI	CH _z OMe	Ms	<u>02</u>
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40	Et	H	Cl	CH₂0Me	MeSO	<u>Q2</u>
	Et	H	CI	CH = OMe	Ms	Q3
	Εŧ	Ĥ	ĊĨ	CH _z OMe	MeS	Q 3
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45	E: E: E:	H	CI	CH ₂ OMe	Ms	₫₹ ₫?)
+0	Et	Ħ	C1	CH ₂ OMe	Ms	Q 5
	Et	Ĥ	Cl	CH _z OMe	Ms	Q 6
	Et	H	C1	CH ₂ OMe	ns Ms	Q 7
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30			CH ₂ OPr-i		п
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	Et l	I CI	CH2OPr-i		H E2
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10	Eŧ	Ĥ	C1	CH ₂ OCH ₂ CH ₂ Cl	Ms	H H H H H
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15	Et	H H	CI	CH ₂ OCH ₂ CH ₂ CN	ns Ms	П IT
	Et	H T	CI	CH ₂ OAm-a		H
	Et	H II	CI	CH ₂ O-Y5	Ms V-	n v
	Et	H H	CI	CHMeOH	Ms W-	<u> </u>
20	F÷	n	C1	CHMeOn CHMeOMe	Ms V-	П
	Ρ÷	n T	Cl	симеоме Сниеоме	Ms Cl	Н Н Н Н
	Et Et	H T	Cl		C1	n T
	Et	n T	CI	CHMeOMe	MeS	H
	Et	H H H H H H	CI	CHMeOMe	MeSO .	H
25	Et	n u	CI	CHMeOMe	Ms	Q1
	Et	11	CI	CHMeOMe	Ms	92
	Et	11	CI	CHMeOMe	Ms	g 3
	Et	H H		CHMeOEt	Ms	H
	Et	H	CI	CHMeOEt	C1	H
30	Et	H	CI	CHMeOEt	MeS	H
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	Et	H H H	CI	CHMe0Et	Ms	QI
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35	Et	п Н	CI	CHMeOEt	Ms	9 3
33	Et	п Н	CI	CHMeOPr-i	Ms	ä
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40	Et		CI	CHMeOPr-n	Ms	H
	Et	H	Cl	CHMeOCH = CH ₂	Ms	H
		H	CI	CHMeOCH = CH ₂	Ms	
	Et	H	Cl	CHMeOCH ₂ CH = CH ₂	Ms	H
	Et	H	Cl	$CHMeOCH_2C \equiv CH$	Ms	H
45	Et	H H	Cl	CHMeOCH2CH2C1	Ms	H H
	Et	H	CI	CHMe0-Y5	Ms	H
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5	Et	H	Cl	CMe ₂ 0Me	C1	A
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10	Et	H H H	CI	CMe=0Et	C1	Ä
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	Et	H	C1	CMezOPr-i	Ms	Ħ
15	Et	H	Cl	CH ₂ CH ₂ OMe	Ms	Ħ
/3	Et		C1	CH ₂ CH ₂ OMe	CI	Ħ
	Et	H H H	C1	CH ₂ CH ₂ OMe	MeS	H
	Et	H	C1	CH ₂ CH ₂ OMe	MeSO	H H H H
	Εt	H	C1	CH ₂ CH ₂ OEt	zK	H
20	Et	H	CI	CH ₂ CH ₂ OE t	CI	H
	Et	H	C1	CH ₂ CH ₂ OEt	MeS	H
	Et	H	C1	CH _z CH _z OE t	MeSO	H
	Et	Ħ	CI	CH ₂ CH ₂ OPr-i	Ms	H
25	Et	H	CI	CH ₂ CH ₂ OPr-i	CI	H H
25	Et	H	CI	CH2CH2OPr-i	MeS	H
	Et	H	CI	CH ₂ CH ₂ OP _T -i	MeSO	H H
	Et	H	C1	CHE tOH) Ys	H
	Et	H	C1	CHE tOMe	Ms	H
30	Et	H .	C1	CHE tOMe	CI W-2	Ħ
	Et Et	H H	C1	CHE tOMe	Me\$	Н Н Н Н
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	Et	H	CI	CHE tOE t CHE tOPr-i	Ms Ms	H
35	E t	n H	CI	CHzOCHzCHzOMe	ns Ms	H
33	Et	H	C1	CH ₂ OCH ₂ CH ₂ OMe	CI	n n
	Et	H	CI	CH ₂ OCH ₂ CH ₂ OMe	MeS	H H
	Ét	Ħ	C1	CH ₂ OCH ₂ CH ₂ OMe	%e30	Ħ
	Et	Ħ	CI	CH ₂ OCH ₂ CH ₂ OE t	Ms	Ħ
40	Et	Ħ	CI	CHMeOCH 2CH 2OMe	Ms	H H H
	Et	Ħ	C1	CH ₂ O-Y8	ZMS	H
	Et	H		CH ₂ O-Y9	Ms.	
	Εt	Ħ	CI CI	CH ₂ O-Y10	Ms	H H
45	Et	Ħ	Či	CHMe0-Y8	iis	H
~	Et	H	Cl	CHMeO-Y9	is	H H H
	EŁ	H	CI	CHMeO-Y10	Ms	H .
	Et	H	C1	CH20-Y13	Ms	H

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5	<u>A</u>	В	X	Y	Z	G.
10	e e e e e e e e	Н Н Н Н	C1 C1 C1 C1 C1	CHMeO-Y13 CH2NHMe CH2NMe2 CH2NEtMe CH2NEt2 CH2-Y14	Ms Ms Ms Ms Ms	нннннннннн
15	5 年 年 年 七	H H H H	C1 C1 C1 C1	CHMeNMez CHzCHzNMez CHzOCHzPh CHMeOCHzPh CHzOCHzCOzNe	Ms Ms Ms Ms Ms	H H H H
20	Et Et Et	H H H	C1 C1 C1 C1	CHzOCHzCOzEt CHzOCHMeCOzMe CHzCN CHMeCN CHzSMe	Ms Ms Ms Ms Ms	H H H
25	eet eet eet	Н Н Н Н	C1 C1 C1 C1 C1	CH≥SMe CH≥SMe CH≥SMe CH≥SEt CH≥SEt	CI MeS MeSO Ms CI	H H H H
30	Et Et Et Et	H . H H H	CI CI CI CI CI	CH ₂ SEt CH ₂ SEt CH ₂ SOMe CH ₂ SOEt CH ₂ SO ₂ Me	MeS MeSO Ms Ms	H H H
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40	Et Et Et	H H H H H	C1 C1 C1 C1 C1	CH _z SO _z Et CH _z SO _z Et CH _z SO _z Et CHMeSMe CHMeSEt	C1 MeS MeSO Ms Ms	H H H H
45	Et Et Et Et	H H H H	C1 C1 C1 C1 C1	CHMeSOzMe CHMeSOzEt CHzSCHzCHzOMe CHzOCOMe CHzOCOEt	Ms Ms Ms Ms Ms	H H H H

	A	В	X	Y	Z	G,
5	Et	H	CI	CHMeOCOMe	Ms	H
	Et	H	ÇI	CH 20S0 2Me	Ms	H
	Et	H	C1	CH ₂ OSO ₂ Et	Ms	H H H H H H H H H H H H H H H H H H H
10	Et D- :	H	C1	CHMeOSO ₂ Me	Ms	H
	Pr-i p- :	H	Cl	CH _z OH	Ms Ms	H
	Pr-i Pr-i	H H	CI	CH ₂ OMe	Ms Cl	H
	Pr-i	Ħ	CI Cl	CH_2OMe CH_2OMe	CI MeS	п
	Pr-i	H	Cl	CH ₂ OMe	MeSO	H T
15	P=-i	Ħ	ČĪ	CH ₂ OMe	Ms	Q1
	Pr-i	Ħ	C1	CH 20Me	MeS	Q1 -
	Pr-i	H	Cl	CH _z OMe	MeSO	Q I
	Pr-i	H	Cl	CH₂0Me	Ms .	Q2
20	Pr-i	H	C1	CH ≥0Me	MeS	92
	Pr-i	H	C1	CH₂0Me	MeS0	Q2
	Pr-i	H H H	Cl	CH₂0Me	Яs	Q 3
	Pr-i Pr-i	H H	C1	CH _z OMe	MeS	93
25	rr-i Pr∸i	n n	C1 C1	CH₂0Me CH₂0Me	MeSO Ms	Q3 Q4 .
	Pr-i	H H H H	CI	CH ₂ OMe	ns Ms	Q 5
	Pr-i	Ħ	ČÎ	CH ₂ OMe	iis Hs	Q 6
	Pr-i	Ħ	CI	CH₂0Me	Ms	<u> </u>
30	Pr-i	H	CI	CH₂0Me	Ms	89
	Pr-i	H	Cl	CH ≥0Me	Иs	Q 9
	Pr-i	H . H	C1	CH 20Et	Ms	H
	Pr-i	H	C1	CH ₂ 0Et	C1 ·	H
05	Pr-i	H	C1	CH ₂ OE t	MeS	H
35	Pr-i Pr-i	H	CI	CH ₂ OE:	MeS0	H
	Pr-i	n H	CI CI	CH ₂ OE t CH ₂ OE t	Ms MeS	Q1 Q1
	Pr-i	H	Cl	CH ₂ 0Et	MeSO	QI
	Pr-i	Ħ	ČĪ	CH ₂ OE t	Ms	92
40	Pr-i	H	ČĨ	CH ₂ 0Et	MeS	92
	Pr-i	H	C1	CH ₂ OE t	MeS0	Q 2
	Pr∸i	H	Cī	CH =0E i	. Ms	Q 3
	Pr-i	H	CI CI	CH zOE t	MeS	Q3
45	Pr-i	Ħ	CI	CH ₂ OE t	MeSO .	Q3
	Pr-i	H	CI	CH _z OEt	Ms :	Q4 05
	Pr-i Pr-i	H H	CI ·	CH ₂ OEt	ak Ms	95 96
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10	Pr-i Pr-i Pr-i Pr-i Pr-i Pr-i	H H H H H	C1 C1 C1 C1 C1	CH ₂ OEt CH ₂ OEt CH ₂ OEt CH ₂ OP _T -i CH ₂ OP _T -i	Ms Ms Ms Ms CI MeS	97 98 99 H
15	Pr-i Pr-i Pr-i Pr-i	H H H H	C1 C1 C1 C1	CH _z OPr-i CH _z OPr-i CH ₂ OPr-i CH ₂ OPr-i CH ₂ OPr-a	MeSO Ms Ms Ms Ms	Q1 Q2 Q3
20	Pr-i Pr-i Pr-i Pr-i Pr-i	H H H H	CI CI CI	CH ₂ OPr-n CH ₂ OPr-n CH ₂ OPr-n CH ₂ OCH = CH ₂	C1 MeS MeSO Ms	H H H H
25	Pr-i Pr-i Pr-i Pr-i	H H H	C1 C1 C1 C1 C1	CH ₂ OCH = CH ₂ CH ₂ OCH = CH ₂ CH ₂ OCH = CH ₂ CH ₂ OCH ₂ CH = CH ₂ CH ₂ OCH ₂ CH = CH ₂	CI MeS MeSO Ms C1	Н Н Н Н
30	Pr-i Pr-i Pr-i Pr-i Pr-i	H H H H	C1 C1 C1 C1 C1	CH ₂ OCH ₂ CH = CH ₂ CH ₂ OCH ₂ CH = CH ₂ CH ₂ OCH ₂ C = CH CH ₂ OCH ₂ C = CH	MeS MeSO Ms Cl	H H H
35	Pr-i Pr-i Pr-i Pr-i Pr-i	H H H	CI CI CI CI	CH ₂ OCH ₂ C = CH CH ₂ OCH ₂ C = CH CH ₂ OCH ₂ CH ₂ C1 CH ₂ OCH ₂ CH ₂ C1 CH ₂ OCH ₂ CH ₂ C1	MeS MeSO Ms CI MeS	H H H H
40	Pr-i Pr-i Pr-i Pr-i	H H H H	C1 C1 C1 C1 C1	CHzOCHzCHzCI CHzOCHzCHzBr CHzOCHzCHzCN CHzOAm-n CHzO-Y5	MeSO Ms Ms Ms Ms	H H H H H H H H H H H H H H H H H H H
45	Pr-i Pr-i Pr-i Pr-i Pr-i Pr-i	H H H H H	C1 C1 C1 C1 C1	CHMeOH CHMeOMe CHMeOMe CHMeOMe CHMeOMe CHMeOMe	Ms Ms C1 MeS MeSO	H H H H
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5	A	В	Х	Y	Z	Q.
J	P r -i	H	CI	CHMe0Me	Ms	92
	Pr-i	H	Cl	CHMe0Me	Ms	83
	Pr-i	H	C1	CHMeOE t	Ms	
	Pr-i	H	CI	CHMeOE t	C1	អ៊
10	Pr-i	H	Cl	CHMeOE t	MeS	H H H
	Pr-i	Ħ	ČĪ	CHMeOE t	MeSO	Ħ
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	Pr-i	Ħ	ČĪ.	- CHMeOEt	Ms	92
15	Pr-i	H	CI	CHMeOE t	žľs	Q3
15	Pr-i	Ħ	Cī	CHMeOPr-i	ZK	Ħ
	Pr-i	Ĥ	C1	CHMeOPr-i	ĊĨ	H H
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20	Pr-i	Ĥ	Cl	CHMeOPr-a	ils 2K	Ħ
	Pr-i	H	CI	CHMeOCH = CHz	Ms	Ħ
	Pr-i	Ħ	C1	$CHMeOCH = CH_{z}$	Ns	й
	Pr-i	Ħ	ČĪ	CHMeOCH cCH = CHz	zK	Ħ
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25	Pr-i	Ĥ	ČĨ	CHMeOCH 2CH 2CI	iis 2K	ਸ਼ੋ
	Pr-i	Ĥ	ČĪ	CHMe0-Y5	zK	H H H H H
	Pr-i	Ē	CI	CMe _z OH	Ms	H
	Pr-i	H	· CI	CMezOMe	Ms	Ħ
30	Pr-i	Ħ	CI	CMe _z OMe	CI	Ħ
30	Pr-i	H	ĊĨ	CMe ₂ OMe	MeS	Ħ
	Pr-i	Ħ	CI	CMe ₂ OMe	MeSO	Ħ
	Pr-i	H	Cl	CMe z OE t	Ms	H
	Pr-i	H	Cl	CMe=OEt	Ci	H
35	Pr-i	Ħ	C1	CMe _z 0Et	MeS	Ħ
	Pr-i	H	CI	CMe _z OEt	MeS0	H
	Pr-i	H	CI	CMezOPr-i	Ms	Ħ
	Pr-i	H	C1	CH _z CH _z OMe	Ms	H H H
	Pr-i	H	CI	CH ₂ CH ₂ OMe	CI	Ħ
40	Pr-i	H	CI	CH=CH=OMe	MeS	H
	Pr-i	H	CI	CH zCH zOMe	MeS0	H
	Pr-i	Ħ	CI	CH ₂ CH ₂ OE t	Мs	H
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45	Pr-i	Ĥ	ĊĨ	CH ₂ CH ₂ OE t	MeS	H
	Pr-i	Ħ	CI	CH ₂ CH ₂ OEt	MeSO	H
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	Pr-i	11 11	CI CI	CHE tOH	Ms	H
10	P . -i	H H	CI	CHE tOMe CHE tOMe	Ms	H
	P r -i	H	CI	CHE tone CHE tone	CI Y-S	H
	Pr-i	H	C1	CHE tone	MeS MeSO	<u>H</u> 11
	Pi	Ħ	C1	CHE totle	Ms	n u
15	Pr-i	Ħ	CI	CHE tOPT - i	ns Ms	H H H H
7.5	Pr-i	Ħ	CI	CHzOCHzCHzOMe	Ms	п
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_	Pr-i	Н.	CI	CH ₂ OCH ₂ CH ₂ OMe	MeSO	Ħ
20	Pr-i	H H . H H	CI	CH2OCH2CH2OEt	Ms	Ĥ
	Pr-i	H	CI	CHMeOCH 2CH 20Me	Ms	H H H
	Pr-i	Ħ	CI	CH 20- Y8	zř	H
	Pr-i	H	CI	CH ₂ 0-Y9	Ms	H
25	Pr-i	H	CI	CH ₂ O-YIO	ris	H
	Pr-i	H H	CI	CHMeO-Y8	lis	H
	Pr-i Pr-i	H H	C1	CHMeO-Y9	Ms	H
	Pr-i	л Н	CI	CHMeO-Y1O	Ms	• Н
	Pr-i	H	CI CI	CH=0-Y13	Ms	H
30	Pr-i	H	CI	CHMeO-Y13	i is	H
	Pr-i	H	CI	CHzNHMe CHzNMez	Ms Ms	H
	Pr-i	Ħ	CI	CH ₂ NEtMe	ns Ms	H H
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35	Pr-i	H	ČĪ	CH ₂ -Y14	Ms	п ц
	Pr-i	Ĥ	ČĪ	CHMeNHe z	Ms	H
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	Pr-i	H	Cl	CH 20CH 2Ph	zK	Ħ
40	Pr-i	H	CI	CHMeOCH _z Ph	Ms	Ħ
40	Pr-i	H	CI	CHz0CHzCOzMe	Ms	H
	Pr-i	H	CI	CH=OCH=CO=Et	Ms	H
	Pr-i	H H	Ci	CH = OCHMeCO = Me	Жs	H
	Pr-i	H	CI CI CI	CH ₂ CN	Ms	H
45	Pr-i	H	C1	CHMeCN .	Ms	H
	Pr-i	H	CI	CH _z SMe	Ms	H
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Pr-i	H	Cl	CH ₂ SO ₂ Me	MeS0	H
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Pr-i	H	C1	CH ₂ SO ₂ Et	Cl	H
Pr-i	H	.C1	CH ₂ SO ₂ Et	MeS	H
Pr-i	H	CI	CH ₂ SO ₂ Et	MeS0	H
Pr-i	H	C1	CHMeShe	Ms	
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Pr-i	H	C1	CHMeS0zMe	Ms	H .
Pr-i		CI	CHMeSO _z E t	Ms .	H
Pr-i	H	C1	CH ₂ SCH ₂ CH ₂ OMe	Ms	H H
Pr-i	H	CI	CH zOCOMe	Ms	H
Pr-i	H H	. Cl	CH ₂ OCOEt	Ms	H
Pr-i	H	CI	CHMeOCOMe	Ms	H H H
Pr-i	H	CI	CH ₂ OSO ₂ Me	Ms	H
Pr-i	H	CI	CH _z OSO _z Et	2K	H
Pr-i	H	C1	CHMeOSO₂Me	Ms	H

Me H MeO CH2OMe Ms Me H MeO CH2OMe Ms Me H MeO CH2OMe C1 Me H MeO CH2OMe MeSO Me H MeO CH2OMe Ms	H H H H
Me H MeO CH20Me Ms Me H MeO CH20Me C1 Me H MeO CH20Me MeSO Me H MeO CH20Me Ms Me H MeO CH20Me MeSO Me H MeO CH20Me Ms Me H MeO<	H H H
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Me H MeO CHrOMe Ms Me H MeO CHrOMe MeS Me H MeO CHroMe Ms Me H MeO CHroMe MeSO Me H MeO CHroMe Ms Me H MeO CHroMe MeSO Me H MeO CHroMe Ms Me H MeO	H
Me H MeO CH ₂ OMe MeSO Me H MeO CH ₂ OMe MeS Me H MeO CH ₂ OMe MeSO Me H MeO CH ₂ OMe MeS Me H MeO CH ₂ OMe MeSO Me H MeO CH ₂ OMe Ms Me H MeO CH ₂ OEt Ms Me H MeO CH ₂ OEt Ms	QI
Me H MeO CH ₂ OMe MeSO Me H MeO CH ₂ OMe MeS Me H MeO CH ₂ OMe MeSO Me H MeO CH ₂ OMe MeS Me H MeO CH ₂ OMe MeSO Me H MeO CH ₂ OMe Ms Me H MeO CH ₂ OEt Ms Me H MeO CH ₂ OEt Ms	QI
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Me H MeO CH ₂ OMe Ms Me H MeO CH ₂ OEt Ms Me H MeO CH ₂ OEt CI	Q3
Me H MeO CH ₂ OMe Ms Me H MeO CH ₂ OEt Ms Me H MeO CH ₂ OEt CI	93
Me H MeO CH ₂ OMe Ms Me H MeO CH ₂ OEt Ms Me H MeO CH ₂ OEt CI	Q3
Me H MeO CHzOMe Ms Me H MeO CHzOEt Ms Me H MeO CHzOEt C1	Q4
Me H MeO CHzOMe Ms Me H MeO CHzOEt Ms Me H MeO CHzOEt C1	95
Me H MeO CHzOMe Ms Me H MeO CHzOEt Ms Me H MeO CHzOEt C1	96
Me H MeO CHzOMe Ms Me H MeO CHzOEt Ms Me H MeO CHzOEt C1	97
Me H MeO CH_2OEt Ms Me H MeO CH_2OEt CI	Q8
Me H MeO CH2OEt C1	99
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14 17 14 44 444 454 154	01 02
me H MeO CH ₂ OEt Ms Me H MeO CH ₂ OEt MeS	92
Me H MeO CH ₂ OEt MeSO	92
Me H MeO CH ₂ OEt Ms	Q 3
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40 Me H MeO CH ₂ OEt MeSO	Q3
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5	Me	H	MeO	CH ₂ OPr-i	Cl	H
	Ме	Ħ	MeO ·	CH _z OPr-i	MeS	Ħ
	Иe	Ħ	Ceff	CH ₂ OP _T -1	MeSO	H
	Me	Ħ	ЙeО	CH _z OPr-i	Ms	9 1
10	Мe	Ħ	MeO	CH ₂ OPr-i	Ms	92
	Me	Ħ	MeO	CH ₂ OPr-i	Ms	Q 3
	Me	H	CeK	CH ₂ OP _T -n	Ms Ms	H
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	Me .	Ħ	MeO CeK	CH ₂ OP _T -n	MeS	H H H
15	Me	H	Сэм	CH ₂ OPr-a	MeSO	T.
	Me	Ħ	CeK	$CH_2OCH = CH_2$	Ms	n u
	ne Me	H	cen Cek	$CH_2OCH = CH_2$	Ci	n n
	Me	Ħ	MeO	$\begin{array}{c} \text{CH}_2\text{OCH} & = \text{CH}_2 \\ \text{CH}_2\text{OCH} & = \text{CH}_2 \end{array}$	MeS	π.
	ne Me	H	MeO	$\begin{array}{c} \text{CH}_2\text{OCH} & -\text{CH}_2\\ \text{CH}_2\text{OCH} & -\text{CH}_2 \end{array}$	MeSO	n •
20	ne Me	H		CH ₂ OCH ₂ CH=CH ₂	neso Ms	н н н н
	ne Me	H	MeO M-0		CI	H
		п Н	MeO	$CH_zOCH_zCH = CH_z$		H
	Me M-	П П	Me0	CH ₂ OCH ₂ CH=CH ₂	MeS	<u>п</u>
25	Ме	H	MeO	CH ₂ OCH ₂ CH=CH ₂	MeS0	H H H
25	Me M-	H H H	Йe0	CH ₂ OCH ₂ C ≡ CH	žš CI	. П . п
	Иe	n 'T	Ceff	CH ₂ OCH ₂ C ≡CH	CI N-3	<u>n</u>
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35	Me	H	. MeO	CHMeOH	Жs	H
	Me	H	MeO	CHMeOMe	Ms	H H
	Мe	H	ЖеО	CHMeOMe	CI	n 17
	Иe	H	MeO	CHMeOMe	MeS	H H
40	Йe	H	CeK	CHMeOMe	MeS0	
40	Ме	H	CeM	CHMeOMe	Ms	Q1
	Мe	H	MeO	CHMeOMe	Ms	92
	Me	H	CeM	CHMeOMe	Ms.	Q 3
	Ме	H	Сец	CHMeOEt	Ms	H
45	Ме	H	MeO	CHMeOE t	C1	H
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	Me	H	MeO	CHMeOE t	MeS0	H
	Me	H	Me0	CHMeOE t	Ms	91

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5	Йe	H	MeO	CHMeOE t	Ms	92
	Иe	H H	MeO	CHMeOE t	Ms	• 23
	Мe		CeM	CHMeOP r -i	Ms	
	Мe	H	MeO	CHMeOPr-i	CI	H
•	Мe	H	MeO	CHMeOPr-i	MeS	H
10	Мe	H	Me0	CHMeOPr-i	MeSO	H H
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	Мe	H	MeO	CHMeOCH = CH ₂	Ms	n n
	Мe	H	MeO	CHMeOCH = CH ₂	Ms	H
15	Йe	H	MeO	CHMeOCH ₂ CH = CH ₂	Ms	H II
75	Мe	H	MeO	CHMeOCH ₂ C≡CH	en ZK	n n
	Мe	H	MeO	CHMeOCH ₂ CH ₂ C1	Ms	n n
	Мe	H	MeO	CHMeO-Y5	Ms	HHHHHHHHHHHHHH
	Мe	H	MeO	CMe ≥OH	ek ek	. H
20	Мe	H	MeO	CMez0Me	Ms	H
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	Мe	H	Me0	CMezOMe	MeS	Ĥ
	. Me	H	MeO	CMe _z OMe	MeSO	H H H H H
25	Мe	H	MeO	CMe _z OEt	Ms	I
	Me	H	MeO	CMe _z OEt	Č1	Ħ
	Me	H	MeO	CMe _z OEt	MeS	Ĥ
	Ме	H	MeO .	. CMezOEt	MeSO	. <u>H</u>
	Ме	H	MeO	CMe _z OP r -i	Ms	H
30	Ме	H	MeO	CH ₂ CH ₂ OMe	Ms	H
	Me	H	MeO	CH _z CH _z OMe	CI	H
-	Ме	H	MeO	CH ₂ CH ₂ OMe	MeS	H
	Ме	H	Me0	CH₂CH₂OMe	MeSO	H
35	Ме	H	Me0	CH ₂ CH ₂ OEt	Ms	, . H
	Йe	H	MeO	CH ₂ CH ₂ OE t	C1	Η
	Ме	<u>H</u> .	MeO	CH ₂ CH ₂ OE t	MeS	H
	Ме	Ħ	MeO	CH2CH2OEt	MeSO	H
	Me	H	MeO	CHzCHzOPr-i	Ms	H
40	Ме	H	MeO	CH2CH2OPr-i	CI	H
	Ме	H	Me0	CH ₂ CH ₂ OP _r -i	MeS	H
	Йe	H	MeO	CH2CH2OPT-i	MeSO	H
	Me M-	H	. MeO	CHE tOH	Ms	H
45	йe	H	MeO	CHE tOMe	Ms	• Н
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	ne Me	H H	MeO	CHE tOMe	MeS	H
	ne ne	n.	Me0	CHE tOMe	MeS0	H

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10	Me	Ĥ	CeK	CH ₂ OCH ₂ CH ₂ OMe	ЖеS	n r
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15	Йe	Ħ	CeM	CH ₂ O-Y8	iis iis	n n
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	Мe	Ħ	MeO	CHMe0-Y8	Ms .	- 11
	Ме	H H	MeO	CHMeO-YS	ns Ms	17
20	Иe	Ħ	MeO	CHMe0-Y10	ns Ms	n u
	Иe	Ħ	MeO	CH ₂ 0-Y13	Ms	11
	Me	Ħ	МеО	CHMe0-Y13	zr. Zř	17
	Мe	H	MeO	CH ₂ NHMe	ns Ms	H H -
	Me	Ħ	CeK	Channe Channe	ns Ns	п.
25	Me	H	KeO	CH 2NE tMe	ris Ms	H H
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	Ме	Ħ	MeO	CH ₂ -Y14	ris Ms	H H H H
	Me	Ħ	. GeM	CHMeNMez		Π 17
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30	Me	H	MeO		Ms V-	n
	Ме	H	MeO	CHzOCHzPh CHMeOCHzPh	Ms H-	H
	Ме	H	MeO		ăs X-	H
	Ме	H	MeO	CH2OCH2CO2Me CH2OCH2CO2Et	Ms M-	<u>n</u>
35	Ме	H	Cen Cen	CH ₂ OCHMeCO ₂ Me	Ms V-	n
	Ме	H	MeO	CH ₂ CN	Ms Ms	п
	Я́е	H	MeO	CHMeCN	ns Ms	H H H H
	Ме	H	MeO	CH ₂ SMe		П U
	Me	H	MeO		Ms CI	п Н
40	Ме	H	MeO	CH ₂ SMe	MeS	H
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45	Me	п Н	MeO	CH ₂ SEt	CI	n p
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15	Мe	H	MeO	CHMeSMe	Ms	H
	Иe	H	MeO	CHMeSE t	Ms	H
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00	Ме Ме	п	MeO	CH ₂ SCH ₂ CH ₂ OMe	Ms V	H
20	ne Me	H H	MeO	CH ₂ OCOMe	Ms	H
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٠.	Et	H	MeO	CH₂OMe	MeS0	Ħ
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	Et	H	CeM	CH₂0Me	MeS	Ql
	Et	H	MeO	CH₂0Me	MeS0	Q 1
35	Et	H	CeM	CH ₂ OMe	Ms	92
	Ēt	H	MeO	CH ≥OMe	MeS	Q2
	Ēŧ	H H	MeO	CH₂0Me	MeSO	Q2
	Et	H	MeO	CH _z OMe	Ms	· Q 3
40	Et	H	MeO	CH₂OMe	MeS	Q3
	Et Et	H	Me0	CH ₂ OMe	MeS0	93
		H	MeO	CH ₂ 0Me	Ms	Q4
•	Et Et	H H	MeO	CH ₂ OMe	Ms V	95 96
	Et	n H	MeO MeO	CHzOMe CHzOMe	ak 2M	97
45 :	Et	H	neo MeO	CHzOMe	ris Ms	98
	Et	H	MeO	CH _z OMe	ns Ms	6 3
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		10"		41.54.24	• • • • • • • • • • • • • • • • • • • 	

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	Et	H	ИеO	CHzOEt	MeS	H H Q1
	Et	H	MeO	CH ₂ OEt.	MeSO	H
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10	Εt	H	MeO	CH ₂ OE t	MeS	91
	Et	Н -	MeO	CH ₂ OEt	MeSO	QI
	Εċ	H H	MeO	CH ₂ OE t	Иs	92
	Et	H H H	CeK	CH ₂ OE t	MeS	92 92
15	医田田田	Ħ	· , CeM	CH ₂ OE t	MeSO	Q2
	Et	H	Me0 1	CH ₂ OE t	Ms	93 93
	Et	H	Celi	CH ₂ OE t	MeS	93
	Et	H	MeO	CH ₂ OE t	MeSO	83
	Et	H H H	MeO	CH ₂ OE t	Мs	94
20	Et	H	MeO	CH _z OE t	Ms	95
	Et	H	MeO	CH ₂ OE t	Ms	Q6
	Et	H H	MeO	CH ₂ OE t	Ms	97
	Et	H	MeO	CH ₂ OE t	Ms	98
25	Et	H	MeO	CH ₂ OE t	Ms	бЭ
20	Et	<u>H</u>	MeO	CH ₂ OPr-i	Ms	H
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30	Et.	H	MeO	CH₂OPr-i)Is	19
	Et	H	MeO	CH ₂ OPr-i) is	Q2
	Et	H H	MeO	CHzOPr-i) is	Q3
	Et	H ''	MeJ	CHzOPr-n	iis	H
35	Et	H	ЖeО	CHzOPr-n	CI	H H
35	Εt	H	ЖeЭ	CH=OPT-n	HeS V-SO	п.
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40	Et	H	MeO	$CH_2OCH = CH_2$	MeSO	Ħ 11
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46	Et	H	MeO	$CH_2OCH_2CH = CH_2$	MeSO	H
45	Et	- H	MeO	CH ₂ OCH ₂ Cn = CH ₂	ineso ineso	H
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5	<u> </u>	B	X	Y	· Z	Q,
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10	Ēt	H H H H	MeO	CH ₂ OCH ₂ CH ₂ CI	MeS	n .
	Et	й	Me0	CH ₂ 0-Y5	MeSO	H H
	Et	H	MeO	CHMeOH	Ms V	H
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15	Et	n n	neo Me0	Carreone Carreone	C1	н .
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	Et	17	MeO	CHMeOMe	MeS0	H
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20	Et	17	MeO	CHMeOMe	Ms	92
	Et	n. H	MeO	CHMeOMe	Ms	g 3
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25	Εt	нннннннннн	MeO MeO	CHMeOEt	MeS0	
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	Et	n n	MeO	CHMeOE t CHMeOE t	Ms	92
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	Et	H H	. neo MeO	CHMeOPr-i CHMeOPr-i	Ms	Н Н Н
30	Et	Ħ II	MeO	CHMeOPr-i	C1	H
	Ēt	H 17	MeO	CAMEOFr-i	MeS	Н
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	F÷	ü ü	MeO	$CHMeOCH = CH_z$	Ms	H
35	Et Et	H II	MeO	$CHMeOCH = CH_z$	Ms	H
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	8	Ħ	MeO	CHMeOCH ₂ C = CH	Ms V-	H H H H
	F÷.	H	MeO	CHMeOCH ₂ CH ₂ CI	Ms Ma	<u> </u>
	F÷	H	MeO	CHMeO-Y5	Ms V-	11
40	F÷	H	Me0		Ms N-	Д U
	F÷	H		CMe = OH =	Ms V-	n H
	Et	H	MeO MeO	CMe:0Me	Ms C	
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	E±	H H	MeO	CMezOPr-i	Ms	H
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0	Et	H	MeO	CH ₂ CH ₂ OMe	MeS	Ħ
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)	Et	11 11	CeM	CH ₂ CH ₂ OP _T -i	MeSO	H
	5.7 5.7	H	CeK	CHE ±OH	Иs	H
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	Et	Ħ	MeO	CHE tOMe	Cl	H
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	Et	H	CeM	CHE tOMe	MeSO	H H H H
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			Me0	CH ₂ O-Y13	Ms	H
	Et	H	ЖeО	CHMeO-Y13	Ms	H H H H H H
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	· Et	Ĥ	MeO	CHMeOCH _z Ph	Ms	П U
10	Ēt	H	CeK	CH ₂ OCH ₂ CO ₂ Me	ns Ms	<u>п</u>
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	Et	Ħ	MeO	CH ₂ CN	ns Ms	П U
15	Et	Ĥ	NeO	CHMeCN	ns . Ms	П U
13	Et	Ħ	NeO	CH₂SMe	ns Ms	П П
	Et	Ħ	МеО	GH _z SMe	CI	п .
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	Et	H	MeO	CH ₂ SO ₂ Et	ĊĨ	Ħ
	Et	H	MeO	CH ₂ SO ₂ Et	MeS	H
	Et	H	MeO	CH _z SO _z Et	MeSO	H
35	Et,	H H H	MeO	CHMeSMe	Ms	H -
	Et t EE	H	MeO	CHMeSEt	Ms	H H
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	Et	H	MeO	CHMeSO _z Et	Ms	H H
40	Et Et	H	MeO	CH2SCH2CH2OMe	Ms -	Ĥ
40	Et	H	MeO	. CH=OCOMe	Ms	H H
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	Εt	H	MeO	CHMeOCOMe	Ms	
	Et Et	H	CeM	CH=OSOzMe	ZK	H H H
45	Et	H	MeO	CH ₂ OSO ₂ Et	Ms	H
	Et	H	MeO	CHMeOSO _z Me	Ms	$\mathbf{H}^{}$
	Pr-i	H	MeO	CHzOH	Ms	H.
	Pr-i	H	CeM	CH ₂ 0Me	Ms	H

	A	Б	X	Y	Z	Ç.
5	Pr-i	H	MeO	Cii₂0Me	Cl	H
	Pr-i		CeK	CH _z OMe	MeS	п 0
	Pr-i	H H H	CeM	CH ₂ OMe	MeSO	H
	Pr-i	H	CeK	CH z OMe	Ms	QI
10	Pr-i	H	MeO	CH ₂ OMe	MeS	Q1
	Pr-i	H	MeO	CH ₂ 0Me	MeSO	QÌ
	Pr-i	H H	Ceff	CH₂0Me	Ms	92
	Pr-i	H	CeM	CH ₂ OMe	MeS	92
15	Pr-i	H	CeM	CH₂OMe	MeS0	92
	Pr-i	H	MeO	CH ₂ OMe	Ms	Q3
	Pr-i	H	MeO	CH ₂ OMe	MeS	93
	Pr-i	H	Celí	CH _z OMe	MeS0	Q3
	Pr-i	H	MeO	CH ₂ OMe	гМ	Q4
20	Pr-i	Ħ	CeK	CH _z OMe	Ms	95
	Pr-i	Ħ	MeO	CH ₂ OMe	Ms	96
	Pr-i	H	CeK	CH ₂ OMe	Ms	97
	Pr-i	H	MeO	CH 20Me	Ms	₽8
25	Pr-i	Ħ	MeO	CH ₂ OMe	Ms	99 H H H
	Pr-i	H	MeO	CH ₂ OEt	. Ms	. H
	Pr-i	H	MeO	CH _z OE:	CI	H
	Pr-i	H	, MeO	CH ₂ OEt	MeS	H
	Pr-i Pr-i	H	- MeO	CH ₂ OE t	neso	H
30	Pr-i	H	Me0	CH ₂ OEt	Ms	QI Ol
	Pr-i	H	MeO MeO	CH ₂ OEt	MeS	QI -
	Pr-i	H	neo MeO	CH ₂ OEt	MeSO	Q1
	Pr-i	H	MeO -	CH ₂ 0E t CH ₂ 0E t	Ms Mas	Q2
35	Pr-i	H	MeO	CH ₂ OE t	MeS NeSO	92
	Pr-i	H	NeO	CH ₂ OE t	Ms Neso	92 93
	Pr-i	Ħ	Ne9	CH ₂ OE t	MeS	g 3
	Pr-i	Ħ	Me0	CH ₂ OE t	C2eK	Q 3
	Pr-i	Ä	MeO	CH ₂ OE t	a Ms	94
40	Pr-i	Ĥ	MeO	CH ₂ OE t	Ms.	as
	Pr-i	H	MeO	CH = OE t	zří	<u>a</u> 6
	Pr-i	H	MeO	CH=0E:	Ms.	Q 7
	Pr-i	H	Cen	CH ₂ OE t	ZK ZK	89
45	Pr-i	H	MeO	CH ₂ OE t	Ms	Q9
	Pr-i	H	CeM	CH2OPr-i	Ms	H
	Pr-i	H	Me0	CHzOPr-i	CI .	H
	Pr-i	H	MeO	CH2OPr-i	MeS	H

5	A ·	В	Х	Y	Z	Q.
J	Pr-i	H	ЙeО	CH ₂ OP _T -i	M-SO	77
	Pr-i	Ħ	ИеО	· CH ₂ OP _T -i	MeSO	H
	Pr-i	H H	MeO	CH ₂ OP r -i	. Ms	Q1
	Pr-i	Ħ	MeO	CH ₂ OP _T -i	Ms	92
10	Pr-i	Ĥ	MeO		its	Q3
	Pr-i	H		CH ₂ OPr-n	Ms	H
	Pr-i	H	Me0	CH ₂ OPr-n	CI	H
	Pr-i	H	MeO	CH ₂ OPr-n	MeS	H H H
	Pr-i	H	ХeО	CH ₂ OP _T -a	MeS0	H
15		<u>n</u>	ЖeО	$CH_zOCH = CH_z$	Ms	H
	Pr-i	H	ЖeO	$CH_zOCH = CH_z$	CI	H
	Pr-i	H	ИеО	$CH_zOCH = CH_z$	MeS	H.
	Pr-i	H	MeO	$CH_zOCH = CH_z$	MeSO	H
	Pr-i	Ħ	MeO	CH2OCH2CH=CH2	Ms	H.
20	Pr-i	H	MeO	$CH_zOCH_zCH = CH_z$	Cl	H
	Pr-i	Ħ	MeO	CH2OCH2CH=CH2	MeS	Ħ
	Pr-i	H H H H	MeO	$CH_2OCH_2CH = CH_2$	MeS0	Ĥ
	Pr-i	H	MeO	CH ₂ OCH ₂ C ≡CH	Ms · · · ·	H
25	Pr-i	Ħ	MeO	$CH_{z}OCH_{z}C \equiv CH$	CI	Ħ
25	Pr-i	H	МеО	CH ₂ OCH ₂ C ≡ CH	MeS	H
	Pr-i	H	ИеО	CH ₂ OCH ₂ C ≡ CH	MeS0	Ĥ
	Pr-i	H	MeO	CH2OCH2CH2C1	Ms	Ħ
	Pr-i	H .	MeO	CH2OCH2CH2C1	CI	Ħ
30	Pr-i	H	MeO	CH2OCH2CH2C1	MeS	H H H H
	Pr-i	H	Me9	CH2OCH2CH2C1	MeS0	F .
	Pr-i	H	MeO	CH 20-Y5	Ms	Ħ
	Pr-i	H	МеO	СНИеОН	Ms	H H H
	Pr-i	H	Me0	СНМеОМе	ds	Ħ
35	Pr-i	H	MeO	CHMe0Me	CI	H
	Pr-i	Ħ	MeO	CHMeOMe	MeS	Ħ
	Pr-i	H	MeO	СНИеОМе	MeSO	H -
	Pr-i	H	MeO	СНМеОМе	Ms	Q1
	Pr-i	H	MeO	CHMeOMe	Ms	92
40	Pr-i	H	MeO	CHMe0Me	Ms	<u> </u>
	Pr-i	H	MeO	CHMe0Et	Ms	H
	Pr-i	H	MeO	CHMe0Et	CI	H
	Pr-i	H	MeO	CHMeOE:	MeS	H
45	Pr-i	H	МеО	CHMeOE:	MeSO	H H H
	Pr-i	H H	MeO	CHMeOE:	Ms	Q 1
	Pr-i	Ä	MeO	CHMeOE:	ens ZK-	Q 2
	Pr-i	Ĥ	MeO	CHMe0Et	Ms	Q3
					117	an .

5	A	B	Х	Y	Z	Ç,
	Pr-i	H	CeK	CHMeOPr-i	Ms	Н
	Pr-i	Ħ	CeM	CHHeOPr-i	CI	нннннннннннн
	Pr-i	H	CeK	CHMeOPr-i	MeS	Ħ
	Pr-i	Ħ	CeK	CHMeOPr-i	MeSO	Ĥ
10	Pi	Н Н Н Н	Ceff	CHMeOPT-n	Ms	Ħ
	Pr-i	H	MeO	$CHMeOCH = CH_2$	Ms	H
	Pr-i	H H H	MeO	CHMeOCH = CHz	Ms	Ĥ
	Pr-i ·	Ħ	CeK	CHMeOCH=CH = CHz	Ms	Ĥ
15	Pr-i	H H	MeO	CHMeOCH ₂ C≡CH	Ms	Ħ
	Pr-i	H	MeO	CHMeOCH ₂ CH ₂ C1	Мs	Ħ
	P - -i	H	MeO	CHMeO-Y5	Hs	H
	Pr-i	H	МеO	CMezOH	Ms	H
	Pr-i	H	MeO	CMez0Me	2M	H
20	Pr-i	H	CeM	CMe z OMe	Cl	H
	Pr-i	H	CeK	CMe ₂ 0Me	MeS	Ħ
	P:-i	H	CeM	CMe _z OMe	MeSO	H
	Pr-i	H	MeO	CMezOEt	Ms	H
25	Pr-i	H	MeO	CMezOEt	C1	H
23	Pr-i	H	MeO	CMe _z OEt	MeS	H
	Pr-i	H	MeO	CMe=OEt	MeSO	H H H H H H H H H H H H H
	Pr-i	H	MeO	CMezOPr-i	Иs	H
	Pr-i	H	Cell	CH _z CH _z OMe	zří	H
30	Pr-i	H	CeM	CH ₂ CH ₂ OMe	C1	H
	Pr-i	H	MeO	CH _z CH _z OMe	MeS	H
	Pr-i	H	MeO	CH _z CH _z OMe	MeSO	H
	Pr-i	, H	MeO	CH _z CH _z OEt	Ms	H
	Pr-i	H	MeO	CH ₂ CH ₂ OE t	C1	H
35	Pr-i	H	ХeО	CH2CH2OEt	MeS	H
	Pr-i	H	MeO	CH2CH2OEt	MeSO	H
	Pr-i	H	MeO	CH2CH2OPT-i	Ms .	H
	Pr-i	Ħ	MeO	CH ₂ CH ₂ OP _T -i	C1	H
40	Pr-i	Ħ	CeK	CH2CH2OPT-i	MeS	H
	Pr-i	<u>H</u>	MeO	CH _z CH _z OPr-i	MeSO	H
	Pr-i	H	MeO	CHE tOH	Ŋs	H
	Pr-i	H	MeO	CHE tOMe	Ms.	H
	P r -i	H	MeO	CHE tOMe	CI	H
4 5	Pr-i	H	Яеĵ	CHE tOMe	MeS	H H
	Pr-i	H	MeO	CHE tOMe	MeS0	n H
	Pr-i	H	MeO	CHE tOE t	Ns V	n H
	Pr-i	H	Me0	CHE tOPr-i	ZK Z	

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5	<u>A</u>	E	X	Y	Z	Ę.
	Pr-i	H	МеО	CH2OCH2CH2OMe	W_	**
	Pr-i	Ĥ	MeO	CH = OCH = CH = OMe	Ms CI	H
	Pr-i	H H	MeO	CH ₂ OCH ₂ CH ₂ OMe	CI	H
	Pr-i	H	MeO	CH ₂ OCH ₂ CH ₂ OMe	MeS Meso	Ħ
10	P r -i	Ĥ	ЖеО	CH ₂ OCH ₂ CH ₂ OE t	MeSO	H T
	Pr-i	Ħ	MeO	CHMeOCH ₂ CH ₂ OMe	Ms Ma	H
	Pr-i	ä	MeO	CH ₂ O-Y8	Ms V	ii T
	P r -i	H H H H	MeO	CH ₂ O-Y9	ăs	H
	Pr-i	H H	MeO	CH ₂ O-Y1O	Ms	н
15	P - -i	n n	Cen	CHMe0-Y8	Ms	H .
	Pr-i	H H	MeO	CHMe0-10	Ms	. <u>H</u>
	Pr-i	H	MeO CeM) ds	H
	Pr-i	H	neo MeO	CHMe0-Y10	Ms	. Н
20	Pr-i	H	Cen	CH ₂ O-Y13	Ms.	Н
	Pr-i	H	neo MeO	CHMe0-Y13) NS	ннннннннннн
	Pr-i	H	neo OeM	CH 2NHHe	ğs	H.
	Pr-i	H	MeO	CH2NMez	Ms	H
	Pr-i	H		CH 2NE tMe	Ms ···	- H
25	Pr-i	H	MeO	CH _z NEt _z	Дs	H
	Pr-i	H	MeO MeO	CH ₂ -Y14	Ms	H H H
	Pr-i	H	MeO OeK	CHMeNMe _z	Ms	H
	Pr-i	H -	Cek	CH ₂ CH ₂ NMe ₂	Ms	H
	Pr-i	H	MeO	CH ₂ OCH ₂ Ph	ĭİs	H
30	Pr-i	H	reo Celi	CHHeOCH2Ph	Ms	H
	Pr-i	H	MeO	CH ₂ OCH ₂ CO ₂ Me	Ms	H
	Pr-i	H	MeO	CH ₂ OCH ₂ CO ₂ Et	Ms	H
	Pr-i	H	MeO	CH _z OCHMeCO _z Me	Мs	H
35	Pr-i	H	нео МеО	CH ₂ CN	Мs	H .
00	Pr-i	H	MeO	CHMeCN	Мs	H H H
	Pr-i	H	MeO	CH 2SMe	Ms	H
	Pr-i	H	CeM	CH 2SMe	CI X-C	H
	Pr-i	H		CH 2SMe	MeS	H
40	Pr-i	H	MeO	CH ₂ SMe	MeS0	H
	Pr-i	H	MeO	CH ₂ SEt	Ms	H
	Pr-i		MeO	CH ₂ SEt	C1	H
	Pr-i	H H	MeO	CH ₂ SE:	MeS	H
	Pr-i	H H	MeO MeO	CH _z SEt	MeSO ·	H
45	Pr-i		MeO MeO	CH ₂ SOMe	Ms	H H
	Pr-i	H	MeO	CH ₂ SOEt	Ms	H
		H	MeO M-O	CH2SO2Me	Ms	H
	Pr-i	H	MeO	CH ₂ SO ₂ Me	Cl	H

	A .	В	X	Y	Z	Q
5	Pr-i	H	MeO	CH _z SO _z Me	MeS	H
	Pr-i	H	MeO	CH ₂ SO ₂ Me	MeSO	
	Pr-i	H	MeO	CH ₂ SO ₂ Et	Ms	H H H
	Pr-i	H	CeM	CH _z SO _z St	C1	Ħ
	Pr-i	H	MeO	CH ₂ SO ₂ Et	ХeS	H
10	Pr-i	H	MeO	CH ₂ SO ₂ Et	MeSO	H
	P r -i	H	MeO	CHMeSMe	Ms .	H
	Pr-i	H	MeO	CHMeSE:	Ms	H
	Pr-i	H	Ceff	CHMeSO ₂ Me	ar.	H
	Pr-i	H	MeO	CHMeSO ₂ Et	Мs	H
15	Pr-i	H	MeO	CH ₂ SCH ₂ CH ₂ OMe	Ms	H
	Pr-i	H	MeO	CH _z OCOMe	Ms	H
	Pr-i	H	MeO	CH _z OCOEt	Ms .	H
	Pr-i	H	CeM	CHHe0C0Me	Ms .	H
20	Pr-i		MeO	CH2OSO2Me	Ms	ннннннннн
	Pr-i	H H	CeM	CH ₂ OSO ₂ Et	XS	H
	Pr-i	H	MeO	CHMeOSO ₂ Me	2ñ	H

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_	<u>A</u>	Б	Х	Y	Z	<u>କ୍</u>
5	Йe	Мe	Мe	CH OH	. 14	
	Иe	Ме	ne Me .	CH ON-	Ms	H H H H Q1
	йe	Ме	nе. Ме	CH ₂ OMe	Ms	H
	Иe	Me	ne Me	CH 2Me	C1	H
10	Иe	Иe	Ме	CH 20Me	MeS	Н
	Йe	Me	ne Me	CH ₂ OMe	HeSO	H
	Иe	Йe	Ме	CH₂OMe CH₂OMe	Ms	
	Иe	Иe	ne Me	CH ON-	C1	<u>Q1</u>
	Йe	Ме	ие Ие	CH ₂ OMe	MeS	QI
15	iie	Ме	ие Ие	CH 20Me CH 20Me	MeSO	92
	Ме	Иe	Me		MeS	<u>Q2</u>
	Иe	Me	Ме	CH ₂ OMe	ЖeSO	92
	Ме	Me	ne Me	CH 20Me	Ms V	Q3
20	Иe	Me	ne Me	CH 20Me :	MeS	Q3
20	Иe	Иe	ne Me	CH ₂ OMe CH ₂ OE t	MeSO	6 3
	lle	Ме	ne Ne		Ms CI	Ħ
	iie lie	Ме	ne Me	CH ₂ OEt	C1	Н
	Мe	Me	ne Ne	CH ₂ OE t	MeS	H H H
25	Me	Ме	ne Me	CH ₂ OEt	MeSO	
	Me	Me	Ме	CH ₂ OE t	Ms	10
	Ме	Ме	Ме	CH ₂ OEt	MeS	Q1
	Ме	Me .	Me	CH ₂ OEt	MeS0	Q1
	Me	Me	Me	CH ₂ OE t	Ms V-s	92
30	Ме	Ме	Ме	CH ₂ OEt	MeS MeS	Q2
	Йe	Йe	Ме	CH ₂ OE t	MeSO	92
	Мe	Ме	Ме	CH ₂ OE t	Ms Mas	Q3
	Me	Йe	Ме	CH ₂ OE t	MeS N-SO	Q3
35	Йe	Иe	Ие	CH ₂ OP _T -i	MeSO	9 3
	Me	Me	Ме	CH ₂ OPr-i	Ms CI	H
	île	Ме	Ме	CH ₂ OP _T -i	MeS	H H H
	Me	Me ·	Me	CH _z OP _r -i	nes MeSO	n n
	Me	Ме	Me	CH ₂ OPr-i	rieso Ms	n Q1
40	Me	Ме	Ме	CH ₂ OP _T -i	ns Ms	
	Мe	Ме	Ме	CH ₂ OP _T -i	ns Ms	92 93
	Me	Ме	Ме	CH ₂ OP _T -n		
	Йe	Иe	Ме	$CH_zOCH = CH_z$	ak As	Н Н Н
40	Йe	Ме	Ме	$CH_2OCH_2CH = CH_2$	ns Ms	n u
45	Me	Ме	Me	$CH_2OCH_2C = CH_2$	ris Ms	п Н
	Me	Ме	He-	CH ₂ OCH ₂ CH ₂ CI	ns Ms	H H
	Me	Иe	Me	CH ₂ O-Y5	ns Ms	n H
			110		119	11

5	A.	В	Х	Y	Z	Q.
5	Йe	Мe	Me	СИМеОН	ds.	H
	Ме	Иe	Иe	CHMe0Me	Ms .	Ħ
	Йe	Иe	Йe	СНМеОМе	CI	H H H H
	Ме	Йe	Me	СНМеОМе	MeS	Ħ
10	Me	Иe	Ме	СНМеОМе	MeSO	Ħ
	Me	Йe	Иe	CHMeOMe	Ms	Q1
	Me	Иe	Иe	СНИеОМе	Ns	Q2
	Me	Иe	Жe	CHMeOMe	Ms	as
	Ме	Йe	Жe	CHMeOE:	ek ek	
15	Me	Йe	Ме	CHMeOE:	ČĪ	Ĥ
	Иe	Иe	Иe	CHMeOE t	MeS	Ĥ
	Мe	Иe	Ме	CHMeOE:	MeSO	H H H
	Иe	Ме	Иe	CHMeOEt	Иs	Q1
20	Me	Йe	Нe	CHMeOE:	Ns .	Q2
	Йe	Иe	Жe	CHMeOE t	Ms	Q3
	Ме	Иe	Нe	CHMeOPT-i	Ms	Ħ
	Иe	Ме	Иe	CHMeOPr-i	CI	Ħ
	Ме	Йe	Йe	CHMeOPr-i	MeS	H H H H
25	Me	Йe	Йe	CHMeOPr-i	MeS0	Ĥ
	Йe	Me	lle	CHMeOPr-n	Ms	Ĥ
	Иe	Me	Me	CHMeOCH = CH ₂	2K	Ĥ
	Йe	Me	Me	CHMeOCH = CHz	zľ	Ħ
30	Мe	Me	Мe	CHMeOCH ₂ CH = CH ₂	Ms	H H
30	Йe	Me	Йe	$CHMeOCH_zC \equiv CH$	Ms	Ħ
	Мe	Мe	Мe	CHMeOCH 2CH 2C1	žiš	H
	Иe	Me	Мe	CHMe9-Y5	Ms	H
	Мe	Мe	Мe	CMe = OH	Мs	H
35	Me	Мe	Йe	CMe _z 0Me	Ms	H H H H
	Иe	Ме	Мe	CMe = OE t	zń	H
	Нe	Ме	Мe	CMezOPr-i	Ms	Ħ
	Мe	Мe	Мe	CH ₂ CH ₂ OMe	Ms	H
	Йe	Me	Жe	CH ₂ CH ₂ OEt	2K	H H H
40	Мe	Ме	Йe	CH ₂ CH ₂ OPr-i	zń	H
	Иe	Иe	Ме	CHE tOH	Ms	H
	Мe	Ме	Мe	CHE tOMe	zK.	H
	Йe	Ме	, Же	CHE tOMe	Cl	H
45	Me.	Мe	Иe	CHE tOMe	MeS	.4
	Мe	Ме	Иe	CHE tOMe	MeS0	H
	Иe	Мe	. Me	CHE tOE t	Ms	H
	Иe	Иe	Me	CHEtOPr-i	Ms	H

	A	B	X	Y	Z	Ç.
5	Me	Me	Me	CH ₂ OCH ₂ CH ₂ OMe	Ms	H
	Me	Me	Me	CH ₂ OCH ₂ CH ₂ OMe	C1	Ħ
	Me	ne Me	ne Ne	CH ₂ OCH ₂ CH ₂ OMe	MeS	
	ne Me	ne Me	ne Me	CH ₂ OCH ₂ CH ₂ OMe	MeSO	ਸ
10	ne Me	ne Me	Me	CH ₂ OCH ₂ CH ₂ OEt	Ms	ਸ਼ੇ
	ne Me	ne Me	ne Me	CHMeOCH ₂ CH ₂ OMe	Ms	Ħ
	ne Me	ne Me	ne Me	CH ₂ 0-Y8	Ms	Ħ
			ne Me	CH ₂ O-Y9	Ms	Ħ
	Ме	Йe	ne Me	CH ₂ 0-Y10	Ms	Ħ.
15	Ме	Me Y-		CHMeO-Y8	Ms	H
	Me .	Иe	Me Ma	CHMeO-Y9	Ms	H II
	Ме	Йe	Me Y-		ns Ms	H 17
	Me	Иe	Ме	CHMeO-Y1O	ns Ms	H
	Ме	Ме	Йe	CH ₂ 0-Y13	ns Ms -	H
20	Иe	Ме	Me	CHMeO-Y13	Ms	Н Н Н Н
	Me	Ме	Ме	CH 2: Me 2		<u>п</u>
	Ме	Ме	Ме	CH ₂ -Y14	Ms V-	11. 12
	Ме	Ме	Мe	CHMeNMe _z	Ms	n u
25	Me	Мe	Me	CH ₂ CH ₂ NMe ₂	Ms	П U
20	Мe	Мe	Me	CH2OCH2Ph	Ms	H H H H
	Me	Me	Ме	CHMeOCH 2Ph	Ms	<u>п</u>
	Мe	Ме	Me	CH ₂ OCH ₂ CO ₂ Me	Ms	n T
	Me	Me ·	Ме	CH2OCH2COzEt	Ms	п
30	Мe	Ме	Me	CH ₂ OCHMeCO ₂ Me	Ms	Ħ
	Me	Ме	Иe	CH ₂ CN	Ms	H
	Мe	Мe	Йe	CHMeCN	Ms	. Н Н Н
	Мe	Мe	Мe	CH₂SMe	Ms	H
	Мe	Мe	Me	CH ₂ SMe	CI	H
35	Me	Иe	Мe	CH₂Side	MeS	H
_	Мe	Мe	Мe	CH ₂ SMe	MeS0	H H H H H
	Мe	Мe	Me	CH ₂ SEt	Ms	H
	ide :	Йe	Йe	CH₂SEt	CI	H
	Me	Мe	Ие	CH ₂ SEt	MeS	H
40	Me	Мe	Мe	CH≥SE t	MeSO	H
	Me	Ме	Мe	CH _z SOMe	2K	
	Me	Мe	Мe	CH ₂ SOE t	Ms	H
	Me	Me	Me	CH ₂ SO ₂ Me	aK.	H H H
45	Мe	Me	Me	CH ₂ SO ₂ Me	CI	H
73	Me	Мe	Me	CH _z SO _z Me	MeS	H
	Me	.He	Me	CH ₂ SO ₂ Me	MeSO	H
	Me	Иe	Me	CH ₂ SO ₂ Et	zK	H

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5	Ме	Me	Ме	CH ₂ SO ₂ Et	Cl	H
	Иe	Ме	Иe	CH ₂ SO ₂ Et	MeS	нннининнинниннинн
	Мe	Me	Йe	CH ₂ SO ₂ Et	MeSO	Ħ
	Me	Me	Me	CHMeSMe	Ms	h H
10	Ме	Жe	Жe	CHMeSE t	ns Ns	n n
	Me	Ме	Иe	CHMeS0 ≥Me	Ns	n n
	Иe	Иe	Жe	CHMeSO ₂ Et	Ms	n n
	Мe	Ме	Ме	CH ₂ SCH ₂ CH ₂ OMe	Ms	ü ü
	Ме	Ме	Йe	CH ₂ OCOMe	Ns	Ħ H
15	Мe	Ме	Ме	CH ₂ OCOEt	Ms	Ħ
	Йe	Йe	Мe	CHMeOCOMe	zří	H
	Мe	Иe	Иe	CH ₂ OSO ₂ Me		Ħ
	Me	Мe	Йe	CH ₂ OSO ₂ Et	Ms	Ħ
20	Ме	Me	Йe	CHMeOSO _z Me	Ms .	·Ħ
	Et	Ме	Ме	CH ₂ OH	Мs	Ä
	Et	Йe	Йe	CH ₂ OMe	zK	ਸੌ
	Et	Ме	Йe	CH _z OMe	CI	Ħ
	Et	Мe	Йe	CH _z OMe	MeS	Ħ
25	Et	Me	Йe	CH _z OMe	MeSO	Ħ
	Et	Йe	Йe	CH ₂ OMe	Ms	<u> </u>
	Et	Me	Йe	CH ₂ OMe	C1	Q1
	Et	Me	Мe	CH z OMe	MeS	Qī
30	Et	Me	Мe	CH ₂ 0Me	MeSO	92
30	Et	Мe	Мe	CH _z OMe	MeS	92
•	Et	Мe	Мe	CH _z OMe	MeSO	92
	Et	Мe	Йe	CH ₂ OMe	Ms	93
	Ėt	Мe	Мe	CH z0Me	MeS	93
35	Εt	Мe	Мe	CH ₂ 0Me	MeSO	Q3
	Et Et	Мe	Мe	CH ₂ 0Et	Ms	H
	Et	Мe	Мe	CH ₂ OE t	C1	H
	Et	Ме	Ме	CH ₂ OEt	MeS	H
40	Et	Мe	Мe	CH _z 0Et	MeS0	- H
40	Et	Ме	Me	CH ₂ OE t	ZM	Ql
	Et	Me	Мe	CH ₂ OE t	MeS	Q1
	Et Et	Me	Ме	CH ₂ 0E t	MeSO	Q1
	Et	Мe	Ме	CH ₂ OE t	Ms	92 92 92 93
45	Et	Мe	Мe	CH ₂ OE t	MeS	92
	Et	Ме	Мe	CH ≥OE t	MeS0	U Z
	Et	Me	Мe	CH 20E t	Ms	HZ CC
	Et	Иe	Иe	CH=0Et	MeS	93

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5	<u>A</u> _	Б	X	. Y	Z	Ç,
3	Et	Мe	Ме	CH ₂ OE t	NeSO	63
	Et	Me	Иe	CH ₂ OPr-i	Ms	H = 2
	Εt	Иe	йe	CH _z OPr-i	Cl	ii. U
	Rt	Me	iie iie	CH ₂ OPr-i	MeS	Д·
10	E t E t	Йe	Иe	CH ₂ OP _T -i		П.
	Et	Ме	ile ile	CH ₂ OP _T -i	MeSO	H H H Q1
	F÷	Ме	Ме	CH ₂ OPr-i	Ms W-	#T
	Et Et	Me	ne Me	CH OD- :	Ms V-	92 93
	E ÷	ne Me	ne Me	CH ₂ OPr-i	Ms V-	43
15	Et	ne Me		CH ₂ OPr-n) js	H
	Et		Me Y-	CH _z OCH = CH _z	Иs	Ħ
	Et	Me M-	. Me	CH ₂ OCH ₂ CH=CH ₂	Ms	H
		Me	Йe	CH ₂ OCH ₂ C ≡ CH	Яs	Ħ H
	E E	Ме	Иe	CH2OCH2CH2C1	Ms	H
20	EE	Ме	Ме	CH20-Y5	Ms	H
	E:	lle	Me	СНМеОН	Ms	H
	EEEE	Me	Me	CHMe0Me	Ms	H H H H H
	Et	Иe	Ме	CHMeOMe	C1	H
0.5	Et	Me	Me	CHMe0Me	MeS	H
25	Et	Иe	Мe	CHMeOMe	MeSO	
	Et	Мe	Мe	CHMeOMe	Ms	Q 1
	Et	Ме	Me	CHMe0Me	zK	Q2
	Et	Me -	Me	CHMe0Me	Ms	Q3
30	Et Et	Me	Иe	CHMeOE t	Ms	
	Et	Ме	Me	CHMeOE t	CI	H H H H
	Εt	Ме	Мe	CHMe0Et	MeS	H
	Et	Ме	Me	CHMeOEt	MeS0	H
	Et	Ме	Мe	CHMeOE:	2M	Q1 ·
35	Et	Ме	Мe	CHMeOE t	Ms	92
	Et	Ме	Мe	CHMeOE t	Ms	23
	Êt	Ме	Ме	CHMeOPr-i	zK	H
	Et	Иe	Мe	CHMeOPr-i	CI	92 93 H H H H
	Εt	Ме	Ме	CHMeOPr-i	MeS	H
40	Et	Мe	Мe	CHMeOPr-i	MeSO	H
	Εt	Ме	Me	CHMeOPr-n	Ms	H
	Et	Ме	Мe	CHMeOCH = CH ₂		H
	Et	Ме	Ме	CHMeOCH = CH ₂	Ms	H
45	Et	Ме	Мe	CHMeOCH ₂ CH = CH ₂	Мs	Ĥ.
	Et	Йe	Me	CHMeOCH _z C≡CH	Ms	H
	Et	Me	Мe	CHMeOCH 2CH 2C1	Ms	H
	Et	Йe	Me	CHMeO-Y5	Ms	H
_						

5	<u>A</u>	ā	X	Y	Z	Q
	Et	Иe	Ме	CMe _z OH	Ms	H
	Εt	Ме	Иe	CMe ₂ OMe	Ms	Ħ
	Εt	Мe	Мe	CMe _z OEt	Мs	H
	Et	Ме	Йe	CMezOPr-i	Ms	n n
)	Et	Me	Йe	CH ₂ CH ₂ OMe	Ms	H H H H H
	Et	Me	Ме	CH ₂ CH ₂ OE t	Ms	П
	Et	Me	Йe	CH ₂ CH ₂ OPr-i	Ms	п п
	Et	Me	Иe	CHE tOH	ris Ms	П П
	Et	Мe	Ме	CHE tONe	ns Ms	Д 17
	Εt	Иe	Йe	CHEtOMe	C1	п
	Et	Me	Ме	CHE:ONe		П
	Et	Me	ne Me	CHE COME CHE COME	MeS	H H H
	Et				MeSO	Ħ
	Et	Me Me	lle V-	CHE tOE t	Иs	H
		Me Y-	Иe	CHE tOPr-i	Ms	H H
	Et E÷	Мe	Ме	CH ₂ OCH ₂ CH ₂ OMe	Ms	H
	Et	Me	Me	CHzOCHzCHzOMe	CI	H
	Et	Ме	ite	CH 20CH 2CH 20Me	MeS	H
	Et	Ме	Йe	CH2OCH2CH2OMe	MeS0	
	Et	Me	Иe	CH 20CH 2CH 2OE t	Ms	H
	Et	Иe	Мe	CHMeOCH 2CH 20Me	Ms	H
	Et Et	Мe	Йe	CH 20 - YB	Ms	H
	Εt	Me .	· Me	CH 20-Y9	Ms	H
	Et	Me	Иe	CH ₂ 0-Y10	Ms	Ĥ
	Et	Мe	Мe	CHMe0-Y8	Ms	Ħ
	Et	Me	Мe	CHMeO-Y9	Ms	Ħ
	Et	Ме	Me	CHMeO-Y10	Ms	Ħ
	Et	Ме	Иe	CH20-Y13	Ms	Ħ
	Εt	Мe	Ме	CHMeO-Y13	Ms	H
	Εt	Мe	Йe	CH = NMe =	Ms .	я
	Ēt	Me	Йe	CH2-Y14	Мs	Ħ
	Et	Me	Мe	CHMeNMe _z	zK	H H H H
	Et	Me	Ме	CH zCH zNMe z	Ms	Ħ
	Et	Me	Мe	CH ₂ OCH ₂ Ph	Ms	11
	Ēt	Me	Иe	CHMeOCH 2Ph	Ms	H
	Ēŧ	Me	Ме	CH ₂ OCH ₂ CO ₂ He	ris Ms	H
	Et	Ме	Ие	CH ₂ OCH ₂ CO ₂ Et	ris Ms	H
	Et	Me				n u
	Et	ne Me	Ме	CH 20CHMeCOzMe	Ys Y-	H
	Et	ne Me	Иe	CH ₂ CN	Ms M-	H
	Et		Me	CHMeCN	Ms M-	H
		Ме	Иe	CH ≥SMe	Ms ·	H

	A	В	X	Y	Z	ę.
5					-	
	Et	Ме	Me	CH ₂ SMe	CI	H
	Et	Ме	Ме	CH₂SMe	MeS	\mathbf{H}
	Εt	Ме	Мe	CH₂SMe	MeSO	\mathbf{H}
10	Et	Me	Ме	CH ₂ SE t	Ms	H
	Et	Ме	Ме	CH2SEt	C1	H
	Et	Ме	Ме	CH _z SE t	MeS	H
	Et	Ме	Me	CH₂SEt	MeS0	H
	Et	Йe	Ме	CH ₂ SOMe	Ms	Ħ
15	Et	Ме	Ме	CH _z SOE t	- Ms	H
	Et	Ме	Ме	CH _z SO _z Me	Ms	H
	Et	Ме	Ме	CH ₂ SO ₂ Me	Cl	H
	Et	· Me	Ме	CH _z SO _z Me	MeS	H
	Et	Ме	Me	CH ₂ SO ₂ Me	MeS0	H
20	Et	Ме	lle	CH ₂ SO ₂ Et	· Ms	H
	Et	Ме	Me	CH ₂ SO ₂ Et	C1	- H
	Et	Me	Ие	CH2SO2Et	MeS	H
	Et	Ме	Me	CH2SO2Et	MeS0	H
25	Et	Иe	Ме	CHMeSMe	Ms	H
	Et	. Me	Иe	CHMeSEt	Ms	H
	Et	Иe	Me	CHMeSO zMē	Ms	нннининнинниннинниннин
	Et	life	Ие	CHMeSOzEt	Ms	H
	Et	Иe .	Me	CH _z SCH _z CH _z OMe	Ms	H
30	Et Et	Ме	Йe	CH ₂ OCOMe	Ms	H
	Et	Ме	Ме	CH _z OCOEt	Ms	H
	E: Et	Me	Ие	CHMeOCOMe	Ms	H
	Et	Me M-	Ме	CH ₂ OSO ₂ Me	Ms	H
35	Et	Me	Иe	CH ₂ OSO ₂ Et	Ms	H.
33	Pr-i	Йe	Me M-	CHMeOSO ₂ Me	Ms	H .
	Pr-i	Me Me	Ме	CH ₂ OH	Ms	H H H H
	Pr-i		. He	CH ₂ 0Me	Ms	H
	Pr-i	Me Me	Ме	CH 20Me	C1	Н
40	Pr-i		Me Y-	CH ₂ OMe	MeS	H
	Pr-i	Me Y-	Me	CH = OMe	деSO	H
	Pr-i	Ме .	Иe	CH 20Me	Ms	Q1
	Pr-i	Me Ma	Жe	CH ₂ 0Me	C1	Q1
	Pr-i	Ме	Иe	CH 20Me	MeS	Q1
45	Pr-i	Ме	Me Me	CH ₂ 0Me	MeSO	Q2
	Pr-i	Me Me	Иe	CH ₂ 0Me	MeS	Q2
	Pr-i	Me	ile Ma	CH ₂ OMe	MeSO	Q2
	11-1	lle .	Иe	CH ₂ 0Me	Ms	Q3

5	A	В	Х	Y	Z	Q
5	Pr-i	Ме	Йe	CH ₂ OMe	MeS	Q3
	Pr-i	Иe	Иe	CH ₂ OMe	MeSO	93
	Pr-i	Мe	Ие	CH zOE £	Ms	
	Pr-i	Ме	Мe	CH _z OE t	Cl	Ħ
10	Pr-i	Мe	Мe	CH ₂ OE t	MeS	Ħ
	Pr-i	Йe	Иe	CH ₂ OEt	MeSO	Ħ
	Pr-i	Иe	Иe	CH ₂ OE±	Ms	H H H Q1
	Pr-i	Мe	Йe	CH ₂ OEt	MeS	QĪ
15	Pr-i	Ме	Мe	CH ₂ OE t	MeSO	Q1
_	Pr-i	Ме	Мe	CH ₂ OEt	Ms	. 92
	Pr-i	Me	Me	CH ₂ OEt	MeS	92
	Pr-i	Me	Мe	CH ₂ OE t	MeSO	92
	Pr-i	Мe	Мe	CH ₂ OE ±	Ms	QЗ
20	Pr-i	Мe	Ме	CH ₂ OE t	MeS	9 3
	Pr-i	Ме	Ме	- CH=OEt	MeS0	QЗ
	Pr-i	Me	Ме	CHzOPr-i	Ms	H
	Pr-i	Me	Ме	CHzOPr-i	CI	H H H
25	Pr-i Pr-i	Me	Ме	i-rqos	MeS	<u>H</u> .
	Pr-i	Ме	Me	CH₂OPr-i	MeS0	H
	Pr-i	Ме	Me V-	CHzOPT-i	Ms	Q1
	Pr-i	Me Me	Me Me	CH ₂ OPr-i	Ms	92
	Pr-i	ne . Me	Me Ma	CH ₂ OPr-i	Ms	9 3
30	Pr-i	ne . Me	Ме Ме	$CH_{2}OP_{T-q}$ $CH_{2}OCH = CH_{2}$	Ms V-	H
	Pr-i	Ме	ne Me	$CH_2OCH_2CH = CH_2$ $CH_2OCH_2CH = CH_2$	Ms M-	H
	Pr-i	Me	Me	$CH_2OCH_2CH = CH_2$ $CH_2OCH_2C = CH$	Ms Ms	H
	P r -i	Ме	Ме	CH ₂ OCH ₂ CH ₂ CI	ris Ms	H H
35	P r -i	Ме	Ме	CH 20 - Y5	ns Ms	n H
	Pr-i	Ме	Жe	CHMeOH	Ms	Ħ
	Pr-i	Иe	йe	CHMedite	zn zn	H II
	Pr-i	Me	Мe	СИМеОМе	Cī	H ·
	Pr-i	Me	.Me	CHMeOMe	ЙeS	Ħ
40	Pr-i	Мe	Йe	CHMeOMe	MeS0	Ĥ
	Pr-i	Мe	Иe	CHMeOMe	Ms	äı
	Pr-i	Мe	Мe	СЯМеОМе	Ms	<u> </u>
	Pr-i	Мe	Ме	CHMeOMe	Ms .	Q 3
45	Pr-i	Me	Йe	CHMeOE t	Ms	H
70	Pr-i	Иe	Ме	CHMeOEt	CI	Ħ
	Pr-i	Мe	Me	CHMeOE t	MeS	H
	Pi	Иe	Иe	CHMeOE t	MeS0	H
						

						
5	A	В	X	Y	Z	Q
	Pr-i	He	Ме	CHMeOE t	W_	
	Pr-i	Ме	Ме	CHMeOEt	Ms V	Q1
	Pr-i	Йe	Ме	CHMeOE t	Ms	Q2
	Pr-i	Иe	Ме	CHMeOPr-i	Ms -	Q 3
10	Pr-i	Иe	Ме	CHMeOPr-i	Ms	H
	Pr-i	Ме	Иe	CHMeOPr-i	C1	H
	Pr-i	Me	Иe	CHMeOPr-i	MeS	H H H
	Pr-i	Ме	∙∦e	CHMeOPT-a	MeSO	H
15	Pr-i	Me	Иe	$CHMeOCH = CH_{z}$	Ms .	H
15	Pr-i	Ме	Ме	CHMeOCH = CH ₂	Ms	H
	Pr-i	Ме	Ме		Иs	H
	Pr-i	Me	. Me	CHMeOCH ₂ CH = CH ₂	Ms	Ή
	Pr-i	Me	Me	CHMeOCH ₂ C=CH	Ms	H
20	Pr-i	Иe	Me	CHMeOCH≥CH≥C1 CHMeO-Y5	Жs	Ĭ.
	Pr-i	Ме	Me	CMezOH	Ms V	H
	Pr-i	Ме	Ме	CMezOMe	ăs V	H H H H H H
	Pr-i	Мe	йe	CMe ₂ OEt	is V-	#
	Pr-i	Ме	Me	CMezOPr-i	. Ms · ·	□ H + +- +-
25	Pr-i	Иe	Ме	CH ₂ CH ₂ OMe	Ms ~_	H. H
	Pr-i	Йe	Иe	CH ₂ CH ₂ OEt	Ms Ms	n n
	Pr-i	Йe	Иe	CH ₂ CH ₂ OP ₇ -i	ns Ms	H
	Pr-i	Me -	Me	CHE tOH	ns Ms	H H
30	Pr-i	Me	Мe	CHE tOMe	Ms ·	п Н
	Pr-i	Мe	Ме	CHEtOMe	C1	H
	Pr-i	Мe	Мe	CHE tOMe	MeS	H
	Pr-i	Мe	Мe	CHEtOMe	MeSO	H
	Pr-i	Йe	Йe	CHEtOEt	Ms	H
35	Pr-i	Иe	Ме	CHEtOPr-i	Ms	Ħ
	Pr-i	Мe	Мe	CH20CH2CH20Me	Ms	H
	Pr-i	Мe	Ме	CHzOCHzCHzOMe	C1	Ĥ
	Pr-i	Мe	Мe	CH zOCH zCH zOMe	MeS	Ħ
40	Pr-i	Ме	Мe	CH zOCH zCH zOMe	MeSO	Ħ
	Pr-i	Мe	Мe	CH ₂ OCH ₂ CH ₂ OEt	Ms	Ĥ
	Pr-i	Ме	Ме	CHMeOCH = CH = OMe	Ms	Ħ
	Pr-i	Me	Мe	CH 20 - Y8	Ms	H
	Pr-i	Мe	Мe	CH ≥0 - Y9	Ms	Ħ
45	Pr-i	Иe	Me	CH20-YIO	Ms	H
	Pr-i	Йe	Me	CHMeO-Y8	Ms	H
	Pr-i	Ме	Мe	CHMeO-Y9	Ms	H
	Pr-i	Me	Me	CHMeO-Y10	Ms ·	H

	A	В	Х	Y	Z	Q
5	Pr-i	Йe	Ме	CH ₂ 0-Y13	Ms	Н
	Pr-i	Me	Мe	CHMeO-Y13	zK	H
	Pr-i	Ме	Ме	CH zilMez	zК	H
	Pr-i	Мe	Йe	CH ₂ -Yl4	Ms .	Ħ
10	Pr-i	Иe	Мe	CHMeNMe _z	Ms	Ħ
	Pr-i	Ие	Мe	CH _z CH _z MMe _z	Ms	H H H H
	Pr-i	Мe	Мe	CH 20CH 2Ph	žK	Ħ
	Pr-i	Ме	Мe	CHMeOCH _z Ph	ăs	Ħ
15	Pr-i	Мe	Иe	ONzOCHZCOZMe	Ms	ਸ਼ੌ
75	Pr-i	Ме	Иe	CH2OCH2CO2Et	Ms	Ħ
	Pr-i	Me	Мe	CH = OCHMeCO = Me	Ms	Ħ
	Pr-i	Иe	Иe	CHzCN	Ms	Ĥ
	Pr-i	Иe	Me	CHMeCN	Ms	Ħ
20	Pr-i	Me	Йe	CH _z SMe	Ms	Ħ
	Pr-i	Иe	Мe	CH _z SMe	CI	Ħ
	Pr-i	Иe	Йe	CH ₂ SMe	MeS	Ĥ
	Pr-i	Me	Йe	CH₂SMe	MeSO	Ħ
	Pr-i	Йe	Йe	CH ₂ SEt	Ms	Ħ
25	Pr-i	Мe	Me .	CHzSEt	Cī	H H H H
	Pr-i	Me	Иe	CH ₂ SEt	MeS	Ħ
	Pr-i	Me	Me	CH ₂ SEt	MeSO	Ħ
	Pr-i	Мe	Me	CH ₂ SOMe	Ms	Ħ
	Pr-i	Иe	Me	CH _z SOEt	Ms	H ,
30	Pr-i	Иe	Йe	CH _z SO _z Me	Ms	H .
	Pr-i	Мe	Мe	CH z SO z Me	CI	H
	Pr-i	Me	Мe	CH z SO z Me	MeS	Ĥ
	Pr-i	Мe	Me	CH ₂ SO ₂ Me	MeSO	H
35	Pr-i	Мe	Йe	CH _z SO _z Et	Яs	Ħ
	Pr-i	Мe	Ме	CH ₂ SO ₂ Et	CI	H
	Pr-i	Me	Ме	CH _z SO _z Et	ЙeS	H -
	Pr-i	Me	йe	CH _z SO _z Et	MeS0	H H H
	Pr-i	Мe	Ме	CHMeSMe	Ms	H
40	Pr-i	Йe	Мe	CHMeSEt	zK	H
	Pr-i	Мe	Ме	CHMeSO _z Me	Ms	Ħ
	Pr-i	Me	Me	CHMeSO _z Et	ak Z	Ħ
	Pr-i	Ме	Иe	eMCsH2ScH2OMe	Ms	H H
15	Pr-i	Йe	Иe	CH ₂ OCOMe	Ms	H
45	Pr-i	Иe	Иe	CH _z OCOEt	Ms .	H
	Pr-i	Me	Иe	CHMeOCOMe	er; eK	H
	Pr-i	Иe	Иe	CH ₂ OSO ₂ Me	Ms	Ħ
	Pr-i	Иe	Ме	CH ₂ OSO ₂ Et	lls	Ħ
50	Pr-i	Иe	Ме	CHMeOSO zMe	Ms	H
			116	01111C000 211C		·•

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5	Иe	Ме	CI	CH ₂ OH	Иs	17
	Me	Иe	ĊĪ	CH₂OMe	ns SK	H
	Мe	Иe	CI	CH ₂ OMe	Cl	n n
	Иe	Ие	Cl	CH _z OMe	MeS	H.
10	Иe	Мe	CI	CH ≥OMe	MeS0	H H H H
	Йe	Мe	C1	CH₂OMe	Ms	ΘĪ
	Йe	Ме	C1	CH₂OMe	CI	Q1
	Me	Мe	C1	CH ₂ OMe	MeS	QI
15	ile M-	Йe	CI	CH ₂ OMe	MeSO	92 92
	Me M-	Йe	C1	CH ₂ OMe	MeS	92
	Me Ma	Ме	CI	CH₂OMe	MeS0	Q2
	Me Me	Me M-	C1	CH₂OMe	Ms	93
	ne Me	Me Me	CI	CH ₂ OMe	MeS	Q3
20	Me	ne Me	C1	CH ₂ OMe	MeS0	Q 3
	Me	Me	CI CI	CH ₂ OEt	Ms	H H
	йe	Ме	CI	CH2OEt CH2OEt	CI W-S	H
	Иe	Ме	CI	CH ₂ OE t	MeS	<u>Н</u>
25	Йe	Me	CI.	CH ₂ OEt	MeSO Ms	П
	Мe	Me	C1	CH ₂ OEt	MeS	QI
	Me	Йe	ČĪ	CH ₂ OEt	MeSO	Q1 Q1
	Me	Мe	CI	CH ₂ OEt	Ms	Q 2
30	Me	Мe	CI	CH ₂ OEt	MeS	92
30	Me	Иe	C1	CH ₂ OEt	MeS0	Q2
	Me	Me	Cl	CH ₂ OEt	Ms	Q3 .
	Ме	Мe	C1	CH ₂ OE:	MeS	Q3
	Ме	Ме	C1	CH ₂ OEt	MeSO	Q3
35	Ме	Ме	CI	CHzOPr-i	Ms	H
	ăe ă−	Йe	C1 ·	CHzOPr-i	CI	H
	Ме	Me	CI	CH 20PT-i	MeS	H H
	Me Me	Ме	Cl	CH ₂ OPr-i	MeSO	H
40	ne Me	Ме	C1	CHzOPT-i	Ms	Q1
	Ие	Me	C1	CHzOPr-1	Ms	Q 2
	ne Me	Me Me	Cl Cl	CH_OPT-I	ทีร *-	Q3
	Иe	Ме	CI	CH ₂ OPr-n CH ₂ OCH = CH ₂	Ms Ms	n u
	Иe	ne Me	CI	$CH_{2}OCH_{2}CH = CH_{2}$	ens EMs	H H H
45	Ме	Иe	CI	CH ₂ OCH ₂ C ≡ CH	ns Ms	л Н
	Me	Ме	CI	CH ₂ OCH ₂ CH ₂ CI	ns Ms	H
	Me	Мe	Či	CH ₂ O-Y5	Ms	H
		~ ~ · · · · · · · · · · · · · · · · · ·				

	A	2	X	Y	Z	Q
	Мe	Me	Cl	CHMeOH	Ms	H
	Me	Йe	CÎ	C#Me0Me	Ms	H H H H
	Ме	Ме	C1	CHMe0Me	CI	H H
	Ме	Me	C1	CHMe0Me	ХeS	11
	Ме	Ме	CI .	CHMe0Me	HeSO	11
	Иe	Me	CI	CHMeOMe		<u>0</u> 1
	Ме	ne Ne	C1	CHMeJMe	Ms Ms	GO FIT
	Me	ne Me	C1	CHMeOMe		92
	ne Me	ne Ne			Ms V-	93
			CI	CHMeOEt	i i i i i i i i i i i i i i i i i i i	H
	Me	Ме .	C1	CHMeOEt	C1	11
	Ме	Иe	CI	CHMe0Et	MeS	n
	Me	Дe	C1	CHMeOEt	MeSO	H
•	Me	Йe	CI	CHMe0Et	Ms	91
	Me	Ие	C1	CHMe0Et	Ms	92
	Me	Ме	CI	CHMe0Et	Ms	Q3
	Мe	Йe	CI	CHMeOPr-i	Ms	Ħ
	Me	Мe	Cl	CHMeOPr-i	Cl	H
	Me	Йe	C1	CHMeOPr-i	MeS	
	Мe	Me	Cl	CHMeOPr-i	MeSO	H
	Мe	Ме	C1	CHMeOPr-n	Ms	H
	Мe	Мe	Cl	CHMeOCH = CH2	zń	H
	Me	Ме	· CI	$CHMeOCH = CH_z$	Ms	H
	Me	Мe	C1	$CHMeOCH_2CH = CH_2$	Ms .	H
	Me	Ме	. C1	$CHMeOCH_zC \equiv CH$	Ms	H
	Мe	Ме	C1	CHMeOCH ₂ CH ₂ C1	Ms	H
	Мe	Me .	C1	CHMe0-Y5	Ms	H
	Me	Ме	Cl	CMe _z OH	Ms	H
	Мe	Мe	C1	CMe z OMe	Ms	Ħ
	Иe	Мe	C1	CMezOEt	Ms	H H
	ħе	Me	C1	CMerOPr-i	Ms	H
	Йe	Me	Cī	CH _z CH _z OMe	ZK	Ħ
	Me	Me	ĊĪ	CH ₂ CH ₂ OEt	Ms	Ħ
	Ме ·	Me	ČĪ	CH ₂ CH ₂ OPr-i	zľs	H
	Me	Ме	ČĪ	CHE ±OH	Ms	Ĥ
	Иe	Ме	Čĺ	CHE tOMe	Ns.	H
	Ме	Иe	CI	CHE tome	CI	Ĥ
	Иe	Ме	C1	CHE tome	MeS	Ĥ
	Me	Me	CI	CHE tone	MeSO	Ħ
	Me	ile ile	CI	CHE LONE CHE LOE L	ileso Ils	Ĥ
	Ие	ne Me	C1	CHE topt-i	is Is	. H

5	A	B	X	Y	Z	G.
	Мe	Ме	CI	CH ₂ OCH ₂ CH ₂ OMe	йs	Ħ
	Мe	Me	CI	CH ₂ OCH ₂ CH ₂ OMe	C1	IL U
	Мe	Me	CI	CH2OCH2CH2OMe	MeS	π.
	Me	Мe	CI	CH _z OCH _z CH _z OMe	MeSO	11
10	Мe	Ме	CI	CH ₂ OCH ₂ CH ₂ OEt	Ms	<u>п</u>
	Me ·	Me	CI	CHMeOCH _z CH _z OMe	Ms	11 12
	Мe	Me	ĊĨ	CH 20-Y8	Ms	Д U
	Мe	Ме	CI	9Y-0-Y9	Ms	П U
15	Мe	Ме	CI	CH ₂ O-Y10	Ms	II II
73	Мe	Ме	ĊĪ	CHMe0-Y8	Ms	п п
	Me	Me	CI	CAMeO-Y9	is As	n u
	Мe	Йe	ČĪ -	CHMeO-Y10	Ms	П U
	Me	Me	CI	CH ₂ 0-Y13	Ms	11 17
20	Me	Me	ČĪ	CHMeO-Y13	Ms	11. 12 ·
	Мe	Me	CĪ	CH ₂ NMe ₂	Ms	II U
	Мe	Йe	ČĪ	CH _z -Y14	ns Ms	<u> </u>
	Мe	Me	CI .	CHMeNMe _z	Ms ::	
	Мe	Йe	ĊĪ	CH ₂ CH ₂ NMe ₂	Ms	ннинининнинниннин
25	Мe	Me	CI	CH ₂ OCH ₂ Ph	iis iis	11
	Me	Me	CI	CHMeOCH _z Ph	Ms	n n
	Иe	Мe	Cl	CH ₂ OCH ₂ CO ₂ Me	Ms	n m
	Мe	Иe	. C1	t3zOJzEJOzHJ	Ms	11
30	Me	. Me	Cl	CH 20CHMeCO zMe	Ms.	H
	Me	Мe	CI	CH ₂ CN	Ms	H H
	Me	Мe	C1	CHMeCN	Ms	H H
	Мe	Мe	CI	CH z SMe	Ms	H
	Мe	Мe	CI	CH ₂ SMe	CI	H
35	Me	Иe	CI	CH 2SMe	MeS	H H
	Мe	Me	CI	CH ₂ SMe	MeSO	Ħ
	ite	Мe	CI	CHzSEt	Ms	Ħ
	Мe	Ме	Cl	CH ₂ SE t	CI	Ħ
40	Me .	Мe	C1	CH ₂ SEt	MeS	Ĥ
40	Мe	Me	Cl	CH 2SE t	MeSO	Ĥ
	Мe	Me	CI	CH 2SOMe	Ms	Ĥ
	Me	Мe	C1	CH ₂ SOE t	zK	Ĥ
	Me	Мe	C1	CH _z SO _z Me	2K	Ħ
45	Йe	Ме	C1	CH _z SO _z He	CI	H "
	Иe	Мe	C1	CH ₂ SO ₂ Me	MeS	H
	Me	Иe	Cl	CH 2SO zife	MeSO	H
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	A	В	X	. Y	Z	ę.
5	Иe	lle	Cl	CH _z SO _z Et	C1	ū
	Иe	iie Me	CI	CH ₂ SO ₂ Et	MeS	H
	Me	Me	CI	CH ₂ SO ₂ Et	MeSO	Н Н Н Н Н
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10	Ме	Me	Cl	CHMeSEt	ns Ms	Д U
	Иe	Иe	C1	CHMeSO _z Me	ns Ys	n
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	Иe	lle lle	CI	CH _z SCH _z CH _z OMe	ns Ms	n u
	Me	Ме	Cl	CH ₂ OCOMe	ns Ms	п 7
15	Me	Ме	CI	CH ₂ OCOEt	ns Ms	Н Н Н
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	Me	ne Me			Ms M-	П II
	ne Me		CI	CH ₂ OSO ₂ Me	Ms Ma	<u> </u>
••	ne Me	Me	C1	CH ₂ OSO ₂ Et	Ms Ma	п
20	Et	Me	C1	CHMeOSOzMe	Ms .	П
	Et	Ме	C1	CH ₂ OH) s	<u>п</u>
	Et	Ме	CI CI	CH ₂ OMe	Ms CI	11
		Me	C1	CH ₂ OMe	CI	H
25	Et	Me	C1	CH ₂ OMe	MeS	H H H H H
	Et:	Ме	CI	CH ₂ OMe	MeSO *	H
	Et	Ме	C1	CH₂OMe	žš.	QI
	Et	Ме	CI	CH 20Me	C1	Q1
	Et	Me .	C1	CH₂0Me	MeS	QI
30	Et	Ме	CI	CH 20Me	MeS0	Q 2
	Et E÷	Иe	Cl	CH₂OMe	MeS	Q2
	Et	Ме	CI	CH₂0Me	MeS0	92 93
	Et	Ме	Cl	CH _z OMe	Ms	9 3
	Et	Жe	C1	CH 20Me	MeS	Q 3
35	Et	Иe	Cl	CH 20Me	MeSO	Q 3
	Et Et	Йe	Cl	CH ₂ OE t	Ms	H H H H
	E:	Ме	C1	CH 20Et	C1	<u>H</u>
	Et	Йe	C 1	CH 20E t	MeS	H
40	Et	Мe	C1	CH ≥OE t	MeSO	H
₩.	Et	Мe	Cl	CH 20E t	Ms	Ql
	Εt	Ме	C1	CH 20E t	MeS	Ql
	Et	Ме	C1	CH 20E t	MeS0	Q1
	Et	Ме	C1	CH ₂ OEt	Ms	Q 2
45	Et	Ме	C1	CH=OEt	MeS	92
	Et	Иe	C1	CH zOE t	MeS0	92
	Et	Мe	C1	CH = 0E t	Ms	Q3
	Et	Иe	CI	CH _z OE t	MeS	Q3

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5	<u> </u>	E	X	Y	Z	Q
	Et	Йe	C1	CH ₂ OE t	MeS0	Q3
	Et	Me	CI	CH ₂ OP r -i	Ms	
	Εt	Йe	C1	CH ₂ OP r -i	C1	n 11
	Et	Иe	C1	CH ₂ OPr-i	MeS	H H
10	Et	Ме	C1	CHzOPr-i	MeS0	H H H Q1
	Εt	Ме	CI	CH ₂ OP _T -i	Ms	<u></u>
	Et	Ме	Cl	CHzOPr-i	iis S	Q 2
	Et	Ме	C1	CH ₂ OPr-i	Ms	Q3
15	Et Et	Йe	C1	CH ₂ OPr-n	Ms	
	Et	Йe	CI	$CH_zOCH = CH_z$	Ms	Ħ
	Et	Мe	Cl	$CH_2OCH_2CH = CH_2$	Ms	Ħ
	Et	Иe	Cl	$CH_{z}OCH_{z}C. \equiv CH$	Ms	Ħ
	Et	Мe	CI	CH2OCH2CH2C1	ZK	Ĥ
20	Et	Мe	CI	CH 20-Y5	Ms	Ħ
	Εt	Ме	C1	CHMeOH	Ms	Ĥ
	Et	Me	CI	CHMeOMe	Ms	Ĥ
	Et	Me	CI	CHMeOMe	CI -	01 H H H H H H H H H H H H H H H H H H H
25	Et	Ме	C1	CHMeOMe	MeS	H
	·Et	Ме	C1	CHMe0Me	MeSO	H
	Et	Ме	C1	CHMe0Me	zř.	Q 1
1	Et	Йe	Cl	СНИеОМе	2K	92
	Et Et	Me -	CI	CHMeOMe	Ms	93
30	Et	Ме	C1	CHMeOEt	Ms	. Н
	Et	Me Me	CI	CHMeOEt	C1	H ·
	Et	ne Me	CI Cl	CHMeOEt	MeS	93 H H H H Q1
	Et	ne Me	CI	CHMeOEt	MeSO	H
35	Et.	Me	CI	CHMeOEt	Ms.	QI
00	Ε÷	Ме	CI	CHMeOE t CHMeOE t	Ms Ma	92
	Et Et	Иe	CI	CHMeOPr-i	Ms W-	Q3 H H H H
	Et	Йe	CI	CHMeOPr-i	Ms CI	П U
	Et	Ме	ČÌ	CHMeOPr-i	MeS	П U
40	Et	Ме	CI	CHMeOPr-i	NeSO MeSO	П U
	Et	Ме	CI	CHMeOPr-n	Ms	H
	Et	йe	CI	$CHMeOCH = CH_z$	Ms	n n
	Et	Ме	CI	CHMeOCH = CH ₂	ns Ms	11 11
45	Et	Ме	CI	$CHMeOCH_2CH = CH_2$	Ms	H H H
40	Et	Ме	CI	$CHMeOCH_2C = CH$	Ms	H
	Et	Йe	CÎ	CHMeOCH CH CH	Ms	H
	Et	Мe	CĪ	CHMe0-Y5	Ms	H
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	ت بل	Мe	CI	CV AT		
	Et		CI	CMe ₂ OH	Ms	H
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	Et	Иe	C1	CMe ₂ OEt	Ms	H
	Et	Ме	C1	CMezOPr-i	Ms	H
10	Et	Ие	C1	CH ₂ CH ₂ OMe	Ms	H
	Et	Мe	C1	CH ₂ CH ₂ OE t	Ms	Ĥ
	Et	Иe	C1	CH ₂ CH ₂ OP _T -i	Ms	Ĥ
	Et	Мe	CI	CHE tOH	Ms	Ĥ ·
	Et	Иe	C1	CHE tOMe	· Ms	Ĥ
	Et	Йe	C1	CHE tOMe	ČĪ	Ħ
	Et	Ме	CI	CHE tOMe	ИeS	Ħ
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20	Et .	lie	ĊĪ	CHE tOPr-i	ZI ZK	17
	Et	Мe	či	CH ₂ OCH ₂ CH ₂ OMe	Ms	71 11
	Et	Иe	CI	CH _z OCH _z CH _z OMe		<u>Д</u> П
	Et	Ме	C1	CH OCH CH OM-	C1	Д ,
	Et	Me	CI	CH ₂ OCH ₂ CH ₂ OMe	ileS N-30	H
25	Et	ile		CH ₂ OCH ₂ CH ₂ OMe	MeS0	H
	Et	ne Me	CI	CH ₂ OCH ₂ CH ₂ OEt) s	H H
	Et	ne Me	Cl ·	CHMeOCH 2CH 20Me	Иs	<u>н</u> .
	Et		C1	CH 20-Y8	Ms	H
	Et	Me	. Cl	CH = 0 - Y9	Ms	H
30	C: C:	Ме	C1	CH20-Y10	lis	H
:	Et	Ме	Cl	CHMe0-Y8	Ms .	H
	Et C:	Йe	CI	CHMeO-Y9	Ms	H
	Et	Ме	CI	CHMeO-Y10	Ms ·	H
ì	Et	Ме	CI	CH20-Y13	zK	H
	Et	Ме	Cl	CHMeO-Y13	Ys.	H
	Et	Мe	Cl	CH ₂ NMe ₂	Жs	H
	Et	Ме	Cl ·	CH _z -Y14	zK	H
E	Et	Мe	CI	CHMeNMez	Ms	H
	Et	Мe	CI	CH _z CH _z NMe _z	Ms	H
40 E	Et	Мe	Cl	CH 20CH 2Ph	2K	Ħ
E	Et	Мe	Cl	CHMeOCH ₂ Ph	Ms	Ħ
Ε	Et	Мe	CI	CH2OCH2CO2Me	er er	H
E		Йe	CÎ	CH ₂ OCH ₂ CO ₂ Et	Ms	H
. E	Es	Me	Čì	CH zOCHMeCO zhe	Ms	H
<i>4</i> 5	Et	Me	CI	CH ₂ CN	ris Ms	H
Ē	Ξŧ	Ме	C1	CHMeCN	ris Ms	H
5	Et	Me	CI	CH _z SMe	ns Ms	п Н
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5	A	В	X	Y	\mathcal{Z}	Q
	Εt	Ме	Cl	CH _z SMe	CI	U.
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	Et	Ме	CI	CH _z SE t	Ms	n n
10	Et	Мe	C1	CH ₂ SE t	CI	
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	Et	Ме	CI	CH ₂ SE t	MeSO	E II
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15	Εt	Йe	CI	CH ₂ SOE t	Ms	11 11
	Et	Me	CI	CH ₂ SO ₂ Me	Ms.	耳. 耳.
	Et Et Et	Мe	CI	CH ₂ SO ₂ Me	CI	n m
	Et	Мe	CI	CH2SO2Me	MeS	<u>ц</u> .
	Et	Мe	CI	CH ₂ SO ₂ Me	MeSO	ц.
20	Εt	Me	CI	CH _z SO _z Et	Ms	H
	Et	Me	CI	CH _z SO _z Et	CI	H
	Et	Мe	CI	CH _z SO _z Et	MeS	H
	Et	Me	CI	CH _z SO _z Et	MeSO	H
	Et	Мe	C1	CHMeSMe	Ms	H H
25	Εt	Мe	CI	CHMeSE t	Ms	H H H
	Et	Me	CI	CHMeSO = Me	Ms	H H
	Et	Me	CI	CHMeSO _z Et	ži. Ži	H
	Et	Me -	CI	CH ₂ SCH ₂ CH ₂ OMe	Ms	H II
30	Et Et Et Et	Мe	C1	CH ₂ OCOMe	iis Sh	H
	Et	Иe	CI	CH ₂ OCOE t	Ms	Ħ
	Εż	Мe	CI	CHMe0C0Me	Ms	H H
	Et	Ме	CI	CH20S0zMe	Ms	H H H H
	Et	-Me	CI	CH20S02Et	Ms	H
35	Et	Мe	Cl	CHMeOSO zMe	Ms	H H
	₽r-i	Мe	C1	CH z OH	Ms	H
	Pr-i	Мe	C1	CH ₂ OMe	Ms	Ħ
	Pr-i	Ме	C1	CH _z OMe	CI	H H H
40	Pr-i	Йe	Cl	CH ₂ OMe	MeS	H
	Pr-i	Иe	Cl	CH₂0Me	MeSO	H
	Pr-i	Ме	CI	CH ₂ 0Me	Ms	Ql
	Pr-i	Иe	CI	CH ₂ 0Me	CI	QI
	Pr-i	Иe	CI	CH ₂ 0Me	MeS	Q1
45	Pr-i	. Me	CI	CH ₂ OMe	MeSO	Q2
	Pr-i	. Me	Cl	CH ₂ 0Me	MeS	Q2
	Pr-i	Me	CI	CH ₂ OMe	MeSO	92
	Pr-i	Йe	Cl	CH _z 0Me	Ms	Q3
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	A	Е	х	Y	Z	Q
5	Pr-i	Иe	C1	CH₂OMe	MeS	02
	Pr-i	Ме	ČĪ.	CH ₂ OMe	nes NeSO	Q3
	P=-i	Ме	ČĪ	CH _z OE t	neso Ms	9 3
	Pr-i	Ме	Ci	CH ₂ OEt	C1	H
10	P r -i	Me	CI	CH ₂ OE t	MeS	H
	P r -i	Me	C1	CH ₂ OE t		H H
	Pr-i	Иe	C1	CH ₂ OE t	NeSO	
	P r -i	Me	CI	CH ₂ OEt	Ms N-S	Q1
	Pr-i	йe	CI	CH ₂ OEt	MeS MeS	IB 10
15	P - -i	Ме	CI	CH ₂ OEt	MeSO	Q1
	Pr-i	Ме	CI	CH ₂ OE t	Ns Y-C	92
	Pr-i	iie Me	- C1 -	CH ₂ OE t	MeS M-co	92 92
	Pr-i	ne Me		CH	MeSO	4Z
	Pr-i	ne Me	C1	CH ₂ OEt	Ms Mag	Q3
20	Pr-i	ne Me	CI	CH ₂ OEt	MeS	93
	Pr-i		Cl	CH ₂ OEt -	MeS0	g 3
	Pr-i	Me	C1	CHzOPr-i	Ms	H.
	Pr-i	Me Me	C1	CH ₂ OPr-i	C1	H.
25	Pr-i	Йe	C1	CH ₂ OPr-i	MeS	H
	Pr-i	Me	CI	CH ₂ OPr-i	MeS0	H
	Pr-i	iie Ma	Cl	CH₂OPr-i	Ŋs	Q1
	Pr-i	Me M-	CI	CH ₂ OPr-i	Мs	92
	Pr-i	Ме М-	. Cl	CH ₂ OPr-i) is	9 3
30	Pr-i	Ме	CI	CH ₂ OPr-n	Ms	H H
	Pr-i	Ме	CI	CH ₂ OCH = CH ₂	Ms	H
	Pr-i	Ме	Cl	CH ₂ OCH ₂ CH=CH ₂	Ms	H
•		Ме	CI	CH ₂ OCH ₂ C ≡ CH	Ms	H
	Pr-i	Me M-	C1	CH 20CH 2CH 2C1	Ms	Ħ
35	Pr-i	Мe	CI	CH ₂ O-Y5	Ms	H
	Pr-i Pr-i	Me	C1	CHMeOH	Ms	H
		Йe	CI	CHMeOMe	ak S	H
	Pr-i	Ме	C1	CHMe0Me	C1	H H H H
40	Pr-i p- :	Me	Cl	CHMeOMe ·	MeS	Ħ
-	Pr-i	Me M-	Cl C'	CHMeOMe	MeS0	
	Pr-i	Me u_	Cl	CHMeOMe	Ms	ΩI
	Pr-i	Me	C1	CHMeOMe	Ms	92 93
	Pr-i	Иe	Cl	CHMeOMe	lls	ศร
45	Pr-i	Ме	C1	CHMeOE t	Ms	H H
	Pr-i	lie Ma	CI	CHMeOEt	C1	<u>H</u>
	Pr-i	Me M-	C1	CHMeOEt	MeS	H
	Pr-i	Мe	CI	CHMeOE t	MeS0	H

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5	Pr-i	Мe	Cl	CIN-OC+	V	
	Pr-i	ne Me		CTW-OF:	Ms	Q1
	Pr-i		C1	CHHeOEt	Ms	Q2
		Ме	Cl	CHMeOEt	Ms	g3
10	Pr-i	Ме	CI	CHMeOPr-i	Ms	H
10	Pr-i	Me	CI	CHMeOPr-i	C1	H
	Pr-i	Йe	CI	CHMeOPr-i	MeS	H
•	Pr-i	Me _.	C1	CHMeOP r -i	MeS0	H
	Pr-i	Мe	Cl	CHHeOPr-n	Ms	\mathbf{H}^{\cdot}
15	Pr-i	Ме	Cl	CHMeOCH = CH ₂	Ms	H
	Pr-i	Иe	CI	$CHMeOCH = CH_2$	Ms	Ħ.
	Pr-i	Мe	CI	CHMeOCH ₂ CH = CH ₂	Ms	Ħ.
	Pr-i	Ме	Cl	CHMeOCH ₂ C≡CH	Ms	H.
-	Pr-i	Me	CI .	CHMeOCH = CH = C1	Ms	H.
20	Pr-i -	Me	CI	CHMeO-Y5	Ms	нининин
	Pr-i	Ме	čī	CMe _z OH	Ms	n T
	Pr-i	Ме	CI	CMe _z OMe	Ms	H
	Pr-i	Me	CI	CMe ₂ OEt		H
	Pr-i	Иe	CI	CMezOPr-i	ak Ms	П IT
25	Pr-i	Ме	C1	CH ₂ CH ₂ OMe		H
	P r -i	Ме	CI		Ms M	H H
	Pr-i	Me		CH ₂ CH ₂ OEt	Ms	<u> </u>
	Pr-i		CI	CH ₂ CH ₂ OP _T -i	Ms	H
		Ме	. C1	CHE tOH	Ms	H H H H
30	Pr-i	Ме	C1	CHE tOMe	Ms	H
	Pr-i	Мe	CI	CHE tOMe	C1	H
	Pr-i	Мe	CI	CHE tOMe	MeS	H
	Pr-i	Me	C1	CHE tOMe	MeSO	H H
	Pr-i	Ме	CI	CHE tOE t	2M	H
3 5	Pr-i	Ме	CI	CHE tOPr-i	Ms	H
	Pr-i	Ме	Cl	CH ₂ OCH ₂ CH ₂ OMe	Ms	H
	Pr-i	Ме	CI	CH ₂ OCH ₂ CH ₂ OMe	Cl	H
	Pr-i	Ме	CI T	CHzOCHzCHzOMe	MeS	Ħ
	Pr-i	Мe	CI	CHzOCHzCHzOMe	MeS0	Ħ
40	Pr-i	Мe	ČĪ	CH ₂ OCH ₂ CH ₂ OEt	Ms	H
	Pr-i	Мe	CI	CHMeOCH ₂ CH ₂ OMe	Ms	H
	Pr-i	Ме	CI	CH 20- Y8		
	Pr-i	ие Ме	CI		Ms .	H
	Pr-i	ne Me		CH ₂ O-Y9	Ms M-	H.
45	Pr-i		CI	CH ₂ O-YIO	Ms ·	H · H
	Pr-i	Me	C1	CHMe0-Y8	Ms	n
		Me	C1	CHMeO-Y9	Ms	H
	Pr-i	Иe	Cl	CHMeO-Y10	Ms	H

5	A	В	Х	Y	Z .	Q
J	Pr-i	Ме	CI	CH=0-Y13	Иs	H
	Pr-i	Иe	Cl	CHMe0-Y13	zK	ннннннннннн
	Pr-i	Иe	C1	CH z NMe z	Ms	H
10	Pr-i Pr-i	Йe	C1	CH2-Y14	Ms	H
	Pr-i	Me Me	C1	CHMeNMe ₂	Ms V-	H
	P r -i	ne Me	C1 C1	CH2CH2NMez PH2CH2CH2	en Z	n
	Pr-i	Me	Ci	CHMeOCH ₂ Ph	ris Ms	n T
15	P r -i	Иe	Cl	CH ₂ CO ₂ He	Ms	H
75	Pr-i	Йe	CI	CH ₂ OCH ₂ CO ₂ Et	Ms	Ħ ·
	Pr-i	Me	CI	CH ₂ OCHMeCO ₂ Me	Ms ·	Ĥ
	Pr-i	Йe	CI	CH _∞ CN	Ms	Ĥ
	Pr-i	Me	CI	CHMeCN	Мs	H
20	Pr-i	Йe	CI	CH₂SMe	äs	H
	Pr-i	Мe	C1	CH₂SMe	C1	H
	Pr-i	Иe	C1	CH ₂ SMe	MeS	H
	Pr-i	Me	Cl	CH ₂ SMe	MeS0	H H H
25	Pr-i Pr-i	Me Me	CI	CH ₂ SEt	Ms	<u> </u>
	Pr-i	ne Me	C1 C1	CH ₂ SE t CH ₂ SE t	Cl MeS	H H
	Pr-i	Me	Cl	CH ₂ SE t	MeS0	H
	Pr-i	Ме	. C1	CH ₂ SOMe	Ms	H
30	Pr-i	Йe	ČĪ	CH ₂ SOEt	Ms	Ħ
	Pr-i	Me	CI	CH 2SO zMe	Ms	H
	Pr-i	Йe	Cl	CH ₂ SO ₂ Me	C1	H
*	Pr-i	Ме	CI	CH z SO z Me	MeS .	H
0.5	Pr-i	Ме	Cl	CH z SO z Me	MeSO	H
35	Pr-i	Ме	CI	CH ₂ SO ₂ Et	Иs	H
	Pr-i Pr-i	Me Me	C1	CH ₂ SO ₂ Et	CI	H
	Pr-i	йе йе	CI C1	CH ₂ SO ₂ Et CH ₂ SO ₂ Et	MeS MeSO	H
	Pr-i	ne Me	CI	CHMeSMe	ileso Ils	H
40	Pr-i	Ме	C1	CHMeSE:	zr Zr	H
	P r -i	Me	CI	CilMeSOzMe	Ms	Ĥ
	Pr-i	Йe	C1	CHMeSO _z Et	Ms	H
	Pr-i	Me	CI	CHzSCHzCHzOMe	Ms	Ħ
45	Pr-i	ite	Cl	CH _z OCOMe	Ms	H
	Pr-i	Мe	C1	CH ₂ OCOE ±	Ms	Ħ
	Pr-i	lite	C1	CHMeOCOMe	Ms	H
	Pr-i	Me	CI	CH ₂ OSO ₂ Me	Ms	H
50	Pr-i	Me .	C1	CH ₂ OSO ₂ Et	Ms	H
00	Pr-i	Иe	CI	CHMeOSO zMe	Ms	п.

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5	<u>A</u>	В	X	Y	z	Q
	Жe	Мe	МеО	C∺ zOH	Иs	п
	Me	Мe	. MeO	CH 20Me	is As	П U
	Мe	Иe	МeO	CH = OMe	CI	п
10	Йe	Иe	MeO	CH zOMe	MeS	Н Н Н Н
	Ме	Мe	MeO	CH ₂ OMe	MeSO	n n
	Мe	Me	MeO	CH z0Me	Мs	<u>0</u> 1
	Йe	Ие	MeO	CH ₂ 0Me	· Cī	QI
	Me	Мe	MeO	CH _z OMe	MeS	QI
15	Me	Йe	MeO	CH ₂ 0Me	MeSO	92
	Ме	Мe	MeO	CH ₂ OMe	MeS	92
	Me	Иe	MeO	CH _z OMe	MeSO	92
	Me	Мe	MeO	CH ₂ 0Me	Ms	03
	Me	Иe	ЙeО	CH ₂ OMe	MeS	2 3
20	Иe	Мe	MeO	CH ₂ OMe	iieS0	Q 3
	Иe	Мe	0eM	CH ₂ OEt	Ms	Ħ
	Ме	Иe	MeO	CH _z OEt	C1	H
	Йe	Ме	МеO	CH _z OEt	MeS	H H
25	Ме	Мe	MeO	CH _z OEt	MeSO	Ĥ
-	Мe	Me	MeO	CH ₂ OEt	Ms	<u>ā</u> ī
	Me	Ме	MeO	CH ₂ 0Et	MeS	<u> </u>
	Me M-	Ме	MeO	CH ₂ OE t	MeSO	QI
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30	Ме	Me i	MeO	CH ₂ 0E t	MeS	92
	Me M-	Ме	Me0	CH 20Et	MeSO	92
	Ме	Иe	MeO	CH 20E t	Ms	Q 3
	Me . Ma	Me	MeO	CH ₂ OE t	MeS	Q3
35	Me Me	Ме	MeO	CH ₂ OE t	MeSO	Q3
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40	ne Me	Me Ma	MeO	CH ₂ OPr-i	Ms	Q I
	Me	Me M-	MeO	CHzOPr-i	Ms	Q 2
	Me	Ме	MeO	CH ₂ OPr-i	Ms	63
	ne Me	Ме	ЙeО	CH ₂ OPr-n	Ms	H
45	ne Me	Me Mo	MeO	CH ₂ OCH = CH ₂	Иs	H H H H
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10	Me	Me	MeO	СНМеОМе	MeSO	ਜ
	Me	lie	MeO	CHMeOMe	Ms	Q 1
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15	Ме	Иe	ХeО	CHMeOEt	ČĪ	H H H
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20	Me	Me	MeO	CHMeOEt	Ms	<u> </u>
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25	Me	Me	йeО	CHMeOPr-i	MeSO	Ħ
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30	Me	Me	MeO	CHMeOCH 2C = CH	Ms	H H H H
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35	Мe	Me	MeĐ	CMe _z OMe	Ns.	Ä
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10	Йe	Ме	MeO	SHOCHSCHOOLS	MeS0	H
	Мe	Ме	MeO	CH2OCH2CH2OEt	Ms	H
	Мe	Me	MeO	CHMeOCH _z CH _z OMe CH _z O-Y8	Ms	H
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15	Мe	Ме	neo NeO	CHMe0-Y8	Ms	<u>H</u> -
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20	Me	Ме	MeO	CHMe9-Y13	Ms	H
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25	Мe	Йe	MeO	CH ₂ CH ₂ NMe ₂ CH ₂ OCH ₂ Ph	Ms	H
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30	Me	Ме	MeO	CHzOCHMeCOzMe CHzCN	Ms	H
	Me	Йe	MeO	CHMeCN	Ms	H
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	Me	Ме	MeO	CH2SMe	Ms	H
35	Me	Ме	MeO	CH 2SMe	CI	H
	Me	Me	MeO	CH ₂ SMe	MeS	<u>H</u> .
	Йe	Me	MeO	CH ₂ SE t	MeS0	H
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40	Me	Йe	MeO	CH _z SE t	MeS	H
	Me	Me	MeO	CH ₂ SOMe	MeS0	H
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45	Me	Йe	neo MeO	CH ₂ SO ₂ Me	C1	H
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20	Мe	Иe	Me0	CHMe0S0 ₂ Me	Ms	Ĥ
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25	Et .	Иe	MeO	CH _z OMe	MeSO	Ĥ
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	Et	Иe	MeO.	CH ₂ OMe	Cl	QI
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30	Εt	Мe	- MeO	CH ₂ OMe	MeS0	Q2
30	Et	Мe	CeK	CH _z 0Me	MeS	92
	Et	Иe	MeO	CH _z OMe	MeS0	Q2
	Et	Мe	Cell	CH ₂ OMe	Ms	93
	Et	Ме	CeM	CH₂0Me	MeS	Q3
35	Et	Йe	CeM	CH₂OMe	MeS0	e 3
	Et	Мe	MeO	CH ₂ OE:	Ms	
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45	Et Et	Мe	Me0	CH ₂ OE t	MeS	92
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	Et	Ме	МеO	CH ₂ OPr-i	Ms	Q 2
	Et	Мe	MeO	CHzOPr-i	Ms	Q3
15	Et	Мe	MeO	CH ₂ OPr-n	zM zM	H.
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20	Et	Ме	MeO	CH=0-Y5	Ms	Ħ.
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25	Et	Мe	MeO	CHMeOMe	MeS	Ħ
25	Εŧ	Ме	MeO	CHMe0Me	MeS0	H
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30	Et	Иe	MeO	CHMeOE t	Ms	H
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35	Et	Мe	MeO	CHMeOEt	Ms	92
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40	Et	Ме Ме	Me0	CHMeOPr-i	MeS	H
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45	Et	ne Me	CeK CeK	CHMeOCH ₂ CH = CH ₂	Ms .	H .
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	Et	Me	MeO	CH ₂ O-Y8	Ms	H
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35	Et	Мe	Ceff	CHMeOSO _{z:} Me	Мs	H
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3	Pr-i	Me	MeO	CH₂0Me	MeS	Q3
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15	Pr-i	Жe	Сэм	CH=0Et	MeSO	Q1
	Pr-i	Ме	MeO	CH ₂ OEt	Ms	92
	Pr-i	Мe	Ceff	CH20Et	MeS	92
	Pr-i	Ме	CeM	CH _z OE t	MeSO	92
	Pi	Ме	MeO	CH ₂ OE t	Ms	93
20	Pr-i	Иe	MeO	CH ₂ OE t	MeS	Q 3
	Pr-i	Ме	MeO	CH ₂ OEt	MeSO	93
	Pr-i	Me	MeO	CH2OPr-i	Ms	ä
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30	Pr-i	Мe	MeO	CHzOPr-n	Ms	
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35	Pr-i	Иe	MeO	CH ₂ O-Y5	Ms	Ĥ
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	Pr-i	Мe	CeK	СНМеОМе	Ms	91
	Pr-i	Мe	ЖеО	CHMe0Me	Ms	Q2
	Pr-i	Me	MeO	CHMeOMe	Мs	92 93
45	Pr-i	Мe	Me0	CHMe0Et	Ms	H H
	Pr-i	Иe	Me0	CHMeOE t	CI	H
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Pr-i Me MeO CHMeOEt Ms G					and the second s		
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	Et	H	Et	CHE tOE t	zK	H
	Et	H	Et	CHzOCHzCHzOMe	Ms	Ĥ
	Et	H	Et	CHMeOCH zCH zOMe	Ms	Ĥ
20	Et	H	Et Et	CHzNMez	Ms	Ħ
	Εt	H	Et	CHMeNMe _z	Ms	H
	Et	H	Et	CH _z CH _z NMe _z	Ms	Ħ
	Et	H	Et	CH ₂ OCH ₂ Ph	Ms	H
	Et	H	Et ·	CHMeOCH 2Ph	Ms	Ħ
25	Et	H	Et	CH2OCH2CO2Me	Ms	Ħ.
	Εt	H H	Et	CH2OCH2CO2Et	Ms	Ĥ
	Et	H	Et	CH 20CHMeCO 2Me	2K	Ħ
	Et	H	Et	CH ₂ CN	Ms	Ħ
30	Et	H	Et .	CH ₂ SMe	Ms	Ĥ
00	Et	H	Et	- CH _z SE t	Ms	H H H H
	Et	H	Εt	CH _z SOMe	Ms	Ĥ
	Εţ	H	Eŧ	CH ₂ SO ₂ Me	Ms	Ĥ
	Et	H	Et	CH ₂ SO ₂ Et	Ms	Ħ
35	Εt	H	Et	CHMeSMe	Ms	· H
	E _t t Et	H	Et	CHMeSO _z Me	Мs	H
		H	Εt	CHzSCHzCHzOMe	Мs	Ħ
	Et	H	Et	CH ₂ OCOMe	zК	H H H
	Et	H	Et	CHMe0C0Me	Ms	Ĥ
40	Et	H	Et	CHzOSOzMe	aK.	H
	Et	H	Et	CHMeOSO zMe	Ms	H H
	Pr-i	H	Ēŧ	CH 2OH	Ms	
	Pr-i	H	Et	CH _z OMe	Ms	- H
45	Pr-i	H	Et	CH _z OMe	CI ·	H
70	Pr-i	H	Et	CH _z OMe	MeS	Ħ
	Pr-i	H	Et	CH ₂ OMe	MeS0	Ħ
	Pr-i	H	Et	CH _z OEt	Ms	H H H H
				-		

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5	A	Б	Х	Y	Z	Ę.
5	Pr-i	H	Et	CH ₂ OEt	CI	H
	Pr-i	Ħ	Et	CH ₂ OE t	MeS	Ħ
	Pr-i	H H	Et	CH ₂ OEt	MeSO	Ħ
	Pr-i	H	Εt	CHzOPr-i	Ms	Ħ
10	P - -i	Ĥ	Et	CH2OPr-n	Ms	Ħ
	Pr-i	Ħ	Et	CH _z OCH = CH _z	Ms	Ħ
	P r -i	Ħ	Εŧ	CH ₂ OCH ₂ CH=CH ₂	2K	Ħ
	P - -i		Et	CH ₂ OCH ₂ C ≡ CH	Ms	Ĥ
15	Pr-i	H . H	Et	CH ₂ OCH ₂ CH ₂ C1	Ns.	Ħ
73	P r -i	Ħ	Et	CHMeOH	Ms	Ĥ
	Pr-i	H H	Et	CHMeOMe	ΝS	Ĥ
	Pr-i	Ħ	Et	CHMeOMe	Cl ·	Ħ
	Pr-i	H	Ēŧ	CHMeOMe	MeS	Ĥ
20	Pr-i	Ħ	Et .	CHMeOMe	MeSO	H
	Pr-i	H	Et	CHMeOE t	Ms	Ħ
	Pr-i	Ħ	Et	CHMeOCH = CH ₂	Ms	Ħ
	Pr-i	Ħ	Ēŧ	CHMeOCH = CH ₂	zK	Ħ
	Pr-i	H	Et	CHMeOCH ₂ CH = CH ₂	Ms	Ĥ
25	Pr-i	H	Ēŧ	CHMeOCH₂C≡CH	zK	Ħ
	Pr-i	Ħ	Et	CHMeOCH _z CH _z CI	Ms	ннннннннннннннннннн
	Pr-i	Ħ	Et	CMezOH	Ms	Ħ
	Pr-i	Ħ	Et	CMez0Me	Ms.	Ĥ -
30	Pr-i	H	Et	CMezOEt	Ms	Ħ
00	Pr-i	Ħ	· Et	CH ₂ CH ₂ OMe	Ms	H
	Pr-i	H	Et	CH ₂ CH ₂ OE t	Ms	H
	Pr-i	Ħ	Et	CHE ±OH	Ms	H
	Pr-i	H	Et	CHE tOMe	Мs	Ħ
35	Pr-i	Ħ	Et	CHE tOE t	Мs	H
	Pr-i	Ħ	Et	CH ₂ OCH ₂ CH ₂ OMe	Ms	H H H H H
	Pr-i	H	Et	CHMeOCHzCHzOMe	Ms .	Н .
	Pr-i	H	Et	CH ₂ NMe ₂	zК	H H H
	Pr-i	H	Et	CHMeNMe ₂	Иs	• Н
40	Pr-i	H	Et	CH ₂ CH ₂ NMe ₂	Ms	H
	Pr-i	H	Et	CH ₂ OCH ₂ Ph	zK	H
	Pr-i	H	Et	CHHe0CH₂Ph	Жs	H
	Pr-i	H	Et	CH ₂ OCH ₂ CO ₂ He	2K	H H H H
45	Pr-i	H	Et	CH2OCH2CO2Ei	zK	H
-	Pr-i	H	Et	CH = OCHMeCO = Me	Ms	Ħ
	Pr-i	H	Et	CH ₂ CN	2M	Ħ
	Pr-i	H	Et	CH _z SMe	Ms	H

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<u>A</u>	E	X	Y	Z	C.
5 Pr-i Pr-i Pr-i Pr-i Pr-i Pr-i Pr-i Pr-i	H H H H H H	E E E E E E E E E E	CH ₂ SEt CH ₂ SOMe CH ₂ SO ₂ Me CH ₂ SO ₂ Et CHMeSMe CHMeSO ₂ Me CH ₂ SCH ₂ CH ₂ OMe CH ₂ OCOMe CHMeOCOMe CH ₂ OSO ₂ Me CHMeOSO ₂ Me	Ms Ms Ms Ms Ms Ms Ms Ms	H H H H H H H H H H

<u>A</u> .	E	X	Y	Z	Q
Йe	Жe	Br	CH ₂ OH	Ms	H
Мe	Иe	Br	. CH _z OMe	Ms	11
йe	Ме	Br	CH ₂ OMe	CI	17
Ме	Me	Br	CH _z OMe	MeS	П 17
Йe	Me	Br	CH ₂ OMe	MeSO	H H H H H
Иe	Йe	Br	CH ₂ OE ±		<u> </u>
Йe	Жe	Br	CH ₂ OE t	Ms Cl	Ц
Йe	Me	Br	CH ₂ OEt		11
Me	Me	Br	CH ₂ OE t	MeS	. H H H
Ме	Иe	Br	CH ₂ OPr-i	NeSO	. Н
Ме	Иe	Br	CH ₂ OPr-n	Ms	Н
Иe	Ме)is	H
Me	ile ile	Br B-	$CH_2OCH = CH_2$	Иs	H . H . H . H
Иe		Br	CH ₂ OCH ₂ CH=CH ₂	Ms	H
Иe	Ме	Br	CH ₂ OCH ₂ C ≡ CH	Ms	H
	Йe	Br	CH2OCH2CH2C1	Ms	H
Me	Ме	Br	CHMeOH	Ms	H
lle	Иe	Br	CHMeOMe	Ms	H
Ме	Ме	Br	CHMeOMe	CI	H
Me	Йe	Br	CHMeOMe	MeS	H
Йe	Me	Br	CHMe0Me	MeSO	H
Me	Иe	Br	CHMeOE t	Ms	H
Me	Иe	Br .	CH _z CH _z OMe	Ms	H
Йe	Мe	Br	CH _z CH _z OE t	Ms	Ħ
Иe	Иe	· Br	CHE tOH	Ms	H
Me .	Иe	Br	CHE tOMe	Ms	Ħ
Йe	Мe	Br	CHE tOE t	Ms	H
Ме	Мe	Br	CH ₂ OCH ₂ CH ₂ OMe	Ms	n n
Ме	Мe	Br	CH ziliez	Ms	H H H
Йe	Ме	Br	CH 20CH 2Ph	en en	II II
Жe	Мe	Br	CH ₂ OCH ₂ CO ₂ Me	- Ms	u U
Мe	Йe	Br	CH ₂ OCH ₂ CO ₂ Et	Ms	11
Mé	Ме	Br	CH ₂ OCHMeCO ₂ Me	Ms	H H H H
Ме	Иe	Br	CH ₂ CN	zn Zři	n U
Мe	Ме	Br	CH ₂ SMe	ns Ms	H
Нe	Же	Br	CH ₂ SEt	ns Ms	
Me	Ме	Br	CH ₂ SO ₂ Me	ris Ns	1 7
Ме	Ме	Br			H H H
Ме	Me		CH ₂ SO ₂ Et	Ms Ma	n
Me ,	Иe	Br B-	CH 2SCH 2CH 2OMe	Ms V-	H
Me	ne Me	Br B-	CH ₂ OCOMe	Ms J	H
11 G .	ne	Br	CHMeOCOMe	Ms	H

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	Мe	Ме	Br	CH ₂ OSO ₂ Me	Ms	17 :			
	Мe	Me	Br	CHMeOSO _z Me	ns Ms	нининининининининин			
	Εŧ	Ме	Br	CH ₂ OH	ns Ms	ii.			
	Et	Ме	Br	CH ₂ OMe	ns Ms	n n			
10	Et Et	Me	Br	CH ₂ OMe	C1	п			
	Et	Me	Br	CH ₂ OMe	MeS	П			
	Et	Me	Br	CH ₂ OMe	nes MeSO	n T			
	Εt	Йe	Br	CH ₂ OEt	Ms	<u>п</u>			
15	Et	Йe	Br	CH ₂ OEt	ns CI	П			
	Et	Йe	Br	CH _z OE t		II II			
	Et	Йe	Br	CH ₂ OEt	MeS	Ω π			
	Et	Иe	Br	CHzOPr-i	MeS0	ii T			
	Et	Мe	Br	CH ₂ OPr-n	Ms Ma	<u>n</u>			
20	Et	Ме	Br	CH ₂ OCH = CH ₂	Ms W-	H .			
	Εż	Ме	Br	$CH_2OCH_2CH = CH_2$	Ms Ma	<u>H</u> . '			
	Et	Ме	Br	$CH_2OCH_2C = CH$	Ms	H			
	Et	Ме	Br .	CH ₂ OCH ₂ CH ₂ CI	Ms .	H			
	Et	Ме	Br	CHMeOH	zk .	H			
25	Et	. Me	Br	Chrieon CHMeOMe	Ms V-	н			
	Ēt ·	. Me	Br ·	Cameone Cameone	Ms Cl	H			
	Et	Ме	Br	CHMeOMe	CI Y-S	H			
	Et	Me	Br	CHMeOMe	MeS	H			
30	Et	Ме .	Br	CHMeOEt	MeSO	H			
•	Et	Me	Br	CH ₂ CH ₂ OMe	ŭs V-	H			
	Et	Me	Br	CH ₂ CH ₂ OEt	Ms	H			
	Et	Me	Br	CHE tOH	Ms	H T			
	Et	Йe	Br	CHE tone	Ms Ma	H			
35	Et	Me	Br	CHE tOE t	Ms V-	H T			
	Et	Йe	Br	CH ₂ OCH ₂ CH ₂ OMe	Ms Ms	H H H H H H H			
	Et Et	Ме	Br	CH2WHez	ns Ms	п			
	Et	Ме	Br	CH ₂ OCH ₂ Ph		п			
	Et	Йe	Br	CH ₂ OCH ₂ CO ₂ Me	Ms Ms	n m			
40	Et	Ме	Br	CH ₂ OCH ₂ CO ₂ Et		Π 17			
	Et	Ме	Br	CH 20CHMeCO 2Me	Ms Ms	П tr			
	Et	Ме	Br		-	n v			
	Et.	Me	Br	CH ₂ CN	Жs	u u			
45	Et	Me	Br	CH₂SMe	ਸ਼ਤ ਅ-	. <u>П</u>			
,0	Et	Me	Br Br	CH ₂ SEt CH ₂ SO ₂ Me	Ms M=	H.			
	Ét 🔧	Me	Br .	CH ₂ SO ₂ Et	Ms Ma	П.			
	Et [.]	Me	Br .	CH _z SCH _z CH _z OMe	Ms Ma	Н Н Н Н Н			
		176	וח	CH 20CH 2CH 2UFIE	Ms	п			

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J	Et	Йe	Br	CH ₂ OCOMe	¥-	77
	Εċ	Йe	Br	CHMe0C0Me	Ms W-	H
	Εt	Йe	Br	CH _z OSO _z Me	Ms Ms	ннниннинининниннинниннин
	Et	Иe	Br	CamedSOzile	ns Ns	<u>п</u>
10	Pr-i	Йe	Br	CH ₂ OH	zn zK	<u>п</u>
	P=-i	Me	Br	CH _a OMe	Ms	п.
	Pi	Йe	Br	CH ₂ OMe	CI	п п
	P=-i	Йe	Br	CH ₂ OMe	MeS	Д.
15	Pi	Мe	Br	CH ₂ OMe	HeSO	<u>п</u>
	Pr-i	Me	Br	CH _z OEt	Ms 2 M	II.
	Pr-i	Йe	Br	CH ₂ OEt	· CI	<u>п</u>
	Pr-i	ile	Br	CH ₂ OEt	MeS	17 17
	Pr-i	Me	Br	CH ₂ 0Et	MeSO	п. П
20	P=-i	Мe	Br	CH _z OP _T -i	Ms .	n m
	Pr-i	Мe	Br	CH _z OP _T -a	zń	ä
	Pr-i	Мe	Br	CH _z OCH = CH _z	zK	n n
	Pr-i	Иe	Br	CH ₂ CH ₂ CH=CH ₂	Ms	H H
25	Pr-i	Me	Br	CH ₂ OCH ₂ C ≡ CH	zĸ	Ħ
,	Pr-i	Иe	Br	CH ₂ OCH ₂ CH ₂ C1	zK	Ħ
	Pr-i	Иe	Br	CHMeOH	Ms	Ħ
	Pr-i	Йe	Br	CHMeOMe	zK	Ħ
	P=-i	Иe	Br	CHMeOMe	CI	Ħ
30	Pr-i	Ме.	Br	СНМеОНе	MeS	Ħ
	Pr-i	Me	Br	CHMeOMe	MeSO	ਜ
	Pr-i	Мe	Br	CHMeOE t	Ms	Ħ
	Pr-i	Ме	Br	CH ₂ CH ₂ OMe	Ms	ä
	Pr-i	Мe	Br	CH _z CH _z OE t	Ms	H
35	Pr-i	Мe	Br	CHE ÷OH	Ms	Ħ
	P=-i	Ме	Br	CHE:OMe	zĸ	H
	Pr-i	Ме	Br	CHE tOE t	zK	H
	Pr-i	Me	Br	CH _z OCH _z CH _z OMe	Мs	H
40	P r -i	Me	Br	CH = NMe =	Ms	H
	Pr-i	Ме	Br	CHzOCHzPh	2K	H
	Pr-i	Мe	Br	CHzOCHzCOzMe	Ms	
	Pr-i	Ме	Br	CH ₂ OCH ₂ CO ₂ E :	Ms	H
	Pr-i	Ме	Br	CH 20CHMeCO zMe	Ms	H H H H
45	Pr-i	Ме	Br	CH =CN	Ms.	Ħ
	Pr-i	Дe	Br	CH z SMe	Ms	H
	Pr-i	Me Ma	Br	CH ₂ SEt	Ms	Ħ
	Pr-i	Me	Br	CH _z SO _z He	Ms	H

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<u>A</u>	В	X	Y	·Z	Q
Pr-i Pr-i Pr-i Pr-i Pr-i	Me Me Me Me Me	Br Br Br Br Br	CH ₂ SO ₂ Et CH ₂ SCH ₂ CH ₂ OMe CH ₂ OCOMe CHMeOCOMe CH ₂ OSO ₂ Me CHMeOSO ₂ Me	Ms Ms Ms Ms Ms	H H H H

	<u> </u>	Б	X	Y	Z	Q
	Ме	Ме	1	CH₂OH	Жs	H
	Me	Me	I	CH _z OMe	Ms	II.
	Йe	Мe	I	CH ₂ OMe	ČĪ	H H H H
	Иe	Ме	Ī	CH ₂ OMe	MeS	17
1	Мe	Иe	Ť	CH=OMe	nes MeSO	11
	lle	Иe	Ĩ	CH _z OE t		. Д
	Мe	Йe	Î	CH ₂ OE t	ns Cl	H rr
	Me	Иe	Ī	CH ₂ OE t		Ħ
	Ме	Me	Ť	CH ₂ OEt	MeS	H
	Иe	Me	Ţ		MeSO	H
	Ме	iie iie	1 7	CH ₂ OPr-i	Ms	H
	iie iie		Ţ	CH ₂ OPr-n	Ms	H
		ĭie	į,	$CH_{2}OCH = CH_{2}$	Ms	H
	Me Ma	Йe	Ţ	$CH_2OCH_2CH = CH_2$	lis	H
	Ме	Де	Ī	CH _z OCH _z C ≡ CH	Ms	H
	Me	Ме	Ī	CH ₂ OCH ₂ CH ₂ C1	Ms	H
	Иe	Иe	I	CHMeOH	Жs	H
	Йe	Мe	I	CHMeOMe	Ms	Ħ
	Me	Иe	I	CHMe0Me	_ C1	Ĥ
	Ме	Me	I	CHMeOMe	MeS	Ĥ
	Мe	Мe	I	CHMe0Me	MeSO	H
	Иe	Ме	Ī	CHMeOE t	Ns	H
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	Йe	Иe	٠Ī	CH ₂ CH ₂ OEt	Ms	u U
	Мe	Me	· •	CHE tOH	Ms	H H
	Me	Йe	Ť	CHE tone	ns Ms	H
	Иe	Ме	Ť	CHE tOE t	ns Ns	П
	Мe	Ме	Ť	CH ₂ OCH ₂ CH ₂ OMe		H H
	Ме	Иe	Ţ	CH 2.WMez	Ms	H
	йe	Иe	Ť	CH ₂ OCH ₂ Ph	Ms	H
	Me	Me	Ţ	CH OCH CO M-	Ms	H
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	Me		1 7	CH2OCH2CO2Et	Яs	H
		ile M-	i T	CH ₂ OCHMeCO ₂ Me	Иs	H H
	Me M-	Ме	Ţ	CH ₂ CN	Ms	H
	Me	Йe	Ī	CH₂SMe	Ms	H
	де	Же	Ī	CH ₂ SE t	Ms	H
	Иe	Ме	Ī	CH ₂ SO ₂ Me	Ms	H H
	Мe	Йe	I	CH ₂ SO ₂ Et	Мs	H
	Me	Йe	I	CH 2SCH 2CH 20Me	Ms	H
	Me /	Ме	I	CH ₂ OCOMe	Ms	H
	Me.	Ме	I	CHMe0C0Me	Ms	Ħ

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5	<u>A</u>	В	X	Y	Z	Q
3	Мe	Йe	7	CT ASS V		
	Me	Me	i T	CH ₂ OSO ₂ He	Ms	H
	Et	йe	l T	CHMeOSO _z Me	Ms	. H
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10	Et		i T	CH = OMe	Ms	H H
	Et	Ме Ч-	į,	CH ₂ 0Me	C1	Ĥ
	_	Ме	Ī	CH₂0Me	MeS	Ĥ
	Et	Йe	1_	CH₂0Me	MeSO	Ħ
	Et	Ме	I	CH = OE t	Ms	Ħ.
15	Et	Ме	Ι	CH ₂ OE t	C1	ਸ ਸ
	Et	Ме	I	CH _z OE t	MeS	H H
	Et	Me	I	CH ₂ OE t	MeSO	H.
	Et	Ме	I	CH ₂ OPr-i	Ms	Ħ
	Et	Me	I	CHzOPr-n	Ms	H II
20	Et	Мe	I	$CH_zOCH = CH_z$	Ms	Н Н Н Н Н Н Н Н
	Ēt	Ме	I	CH ₂ OCH ₂ CH=CH ₂	Ms	11
	Et	Мe	I	CH ₂ OCH ₂ C ≡ CH	Ms	H
	Et	Ме	I.	CH2OCH2CH2CI	Ms	H
	Et	Ме	Ī	CHMeOH	ns Ms	n H
25	Et	Мe	Ī	CHMe0Me	ns Ms	п
	Et	Me	. <u>Ī</u>	СНИеОМе	C1	H.
	Et	Ме	Ī	CiineOne		H
	Et	Иe	ī	CHMeOMe	MeS	H
30	Et	Ме	ī	CHMeOEt .	MeSO	H
	Et	Me	Ī	CH ₂ CH ₂ OMe	ns .	H H H
	Et	Me	ī	CH ₂ CH ₂ OEt	Ms	H
	Εŧ	Ме	Ī.	CHE tOH	Ms V-	H
	Εċ	Мe	Ť	CHE tOMe	Ms	H
35	Et	Мe	Ť	CHE :OE :	Ms	H
	Et	Me	Ť	CH ₂ OCH ₂ CH ₂ OMe	Ms	H
	Èt	Ме	Ť	CH2NMez	Ms	H
	Et	Ме	Ť	CH ₂ OCH ₂ Ph	Ms	<u>H</u>
	Et	Ме	Ī	כמינטכת כס א-	Мs	H.
40	Eŧ	Ме	r r	CHzOCHzCOzMe	Ms	H
	Et	Ме	i. T	CH2OCH2CO2Et	Ms	H
	Ēt	йe	I.	CH = OCHMeCO = Me	Ms	H
	Et	ne Ne	Ţ	CH ₂ CN	Ms	H
	Et	ne Me	i T	CH ₂ SMe	Ms	H
45	Et		į T	CH ₂ SE t	zK	H .
	Et ,	Ме ×-	1	CH2SO2Me	Ms	H .
	Et.	Me Ma	į	CH2SO2Et	Ms	H
	Ľ÷.	MeMe	1	CHzSCHzCHzOMe	Ms	H

5	A	В	Х	Y	Z	Ç,
J	Et	Ме	ī	CH _z OCOMe	Ms	H
	Et	Иe	I I	CHMe0C0Me	Ms	Ħ
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	Et	Me	Ť	CHMeOSO zMe	Ms	Ħ
10	P r -i	Me	Ť	CH ₂ OH	Ms	ਸ਼ੌ
	Pr-i	Ме	ŗ	CH ₂ OMe	Ms	Ħ
	Pr-i	Ме	7	CH ₂ OMe	CI	· #
	P=-i	Ме	ī	CH ₂ OMe	MeS	H
	Pr-i	Me	I T	CH ₂ OMe	MeSO	H
15	Pr-i	ne Me	ľ	CH ₂ OEt	Ms	Ħ
	P r -i	Me	I T	CH ₂ OE t	CI	Ħ
		ne Me	l T	CH ₂ OE t	MeS	Ħ
	Pr-i Pr-i	ne Ne	Ţ	CH ₂ OE t	MeSO	
20		ne Me	L T	CH ₂ OP _T -i	Ms	Ħ
	Pr-i Pr-i	ne Me	<u>l</u> T	CH ₂ OPr-n	Ms	H
	P_ :		l T	$CH_2OCH = CH_2$	Ms	H
	Pr-i	Нe	1 7	CH OCH CH — CH	Ms	H H
	Pr-i	Мe	i T	$CH_2OCH_2CH = CH_2$	ns Ms	H 17
25	Pr-i	Ме	1	$CH_2OCH_2C \equiv CH$ $CH_2OCH_2CH_2CI$	ns Ms	17
	Pr-i	Мe	1		ns Ns	H .
	P r -i	Мe	ļ.	CHMeOH	ns Ms	n. Tr
	Pr-i	Ме	Ţ	CHMeOMe	C1	π.
	Pr-i	Ме	Ţ	CHMeOMe	MeS	H
30	Pr-i	Me	. <u>I</u>	CHMeOMe	MeS0	Ħ
	Pr-i	Ме		CHMeOMe	Ms	H
	P⊤-i	Мe	Ţ	CHMeOEt	ns Ms	H
	Pr-i	Ме	I	CH ₂ CH ₂ OMe	ns Ms	H
35	Pr-i	Мe	Ĭ	CH ₂ CH ₂ OEt	ns Ms	H
33	Pr-i	Ме	Ţ	CHE tOH		11 11
	Pr-i	Мe	Ī	CHE tOMe	Ms Ms	H H H H
	Pr-i	Ме	Ţ	CHE tOE t		n. m
	Pr-i	Йe	į	CH2OCH2CH2OMe	Ms Ms	u u
40	Pr-i	Иe	Ī	CH ₂ NMe ₂	ns Ms	n U
	Pr-i	Ме	i	CH ₂ OCH ₂ Ph		n H
	Pr-i	Мe	<u>i</u>	CHzOCHzCOzMe	Ms u	
	Pr-i	Мe	Ī	CH2OCH2CO2Et	ys Y-	H H
	Pr-i	Мe	Ī	CH=OCHMeCO=Me	Ms W-	H
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25	CH _z C ≡CH	H	Ме	CHzOCHzCOzMe	Жs	H
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35	CH ₂ C ≡CH	H	Ме	CHMeSMe	Ms	H
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40	$CH_{c}C \equiv CH$	H	Мe	CH ₂ OSO ₂ Me	Яs	H
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10	CH ₂ CH=CH ₂	H	CI	CH ₂ OP _T -n	Ms	H
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20	CH ₂ CH=CH ₂	Ħ	CI	CHMeOMe	MeSO	H H H
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	$CH_2C \equiv CH$	H	CI	CH ₂ OCOMe	Ms	H
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	CH ₂ C ≡CH	H	CI	CH ₂ OSO ₂ Me	Ms	H
	$CH_2C \equiv CH$	H	CI	CHMeOSO _z Me	Ms	H
35	$CH_2CH = CH_2$	H	Me0	CH _z OH	Ms	H
	CH _z CH = CH _z	H	MeO	CH₂OMe	Ms	- H
	CH-zCH = CH z	H	MeO	CH₂0Me	CI	H
	CH ₂ CH=CH ₂	H	MeO	CH ₂ OMe	MeS	H
40	$CH_2CH = CH_2$	H	MeO	CH ₂ OMe	MeS0	H
	$CH_2CH = CH_2$ $CH_2CH = CH_2$	H	MeO	CH ₂ OE t	Ms	H
	$CH_2CH = CH_2$ $CH_2CH = CH_2$	H	МеО	CH ₂ OE±	C1	H
	$CH_2CH = CH_2$	H	MeO	CH ₂ OE t	MeS	H H H
45	$CH_2CH = CH_2$	H H	MeO	CH ₂ OEt	MeS0	H
	$CH_2CH = CH_2$	п Н	Me0	CH ₂ OPr-i	Ms	
	$CH_2CH = CH_2$	п Н	MeO MeO	CH ₂ OPr-n	Ms	H
	-115011 0115	ш	เนีย	$CH_2OCH = CH_2$	Ms	H

	A	В	X	Y	Z	Q.
	$CH_2CH=CH_2$	H	MeO	CH ₂ OCH ₂ CH=CH ₂	Ms	H
5	$CH_zCH = CH_z$	H	MeO	CH ₂ OCH ₂ C ≡CH	Ms	Ħ
	$CH_2CH = CH_2$	H	ИeО	CH2OCH2CH2C1	Ms	H H H
	$CH_zCH = CH_z$	Ħ	МeЭ	CHMeOH	Ms	H
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10	$CH_2CH = CH_2$	Ħ	CeM	CHMe0Me	CI	H
	$CH_2CH = CH_2$	H	CeM	СНИеОМе	MeS	ннннннн
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	$CH_2CH = CH_2$	H	MeO	CHMeOEt	Ms	Ħ
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15	$CH_2CH = CH_2$	H	MeO	CHMeOCH = CH ₂	Ms	Ħ
	$CH_2CH = CH_2$	Ħ	MeO	CHMeOCHzCH = CHz	Ms -	Ħ
	$CH_2CH = CH_2$	H	MeO	CHMeOCH ₂ C≡CH	Ms	Ħ
	$CH_2CH = CH_2$	Ħ	MeO	CHMeOCH2CH2C1	Ms	я
20	$CH_2CH = CH_2$	H	Ceff	CMe ₂ OH	Ms	Ħ
20	$CH_2CH = CH_2$	Ħ	Сем	CMe_0Me	Ms	Ħ
	$CH_2CH = CH_2$	Ħ	MeO	CMe ₂ 0Et	Ms	Ĥ
	$CH_zCH = CH_z$	Ĥ	MeO	CH _z CH _z OMe	Ms	H H H H H
	CH ₂ CH=CH ₂	Ĥ	CeK	CH ₂ CH ₂ OE t	Ms	Ħ
25	$CH_2CH = CH_2$	Ħ	MeO	CHE tOH	Ms	Ħ
	$CH_2CH = CH_2$	H	MeO	CHE tOMe	Ms	Ħ
	$CH_zCH = CH_z$	Ĥ	MeO	CHEtOEt	Ms	Ħ
	$CH_zCH = CH_z$	Ħ	ИeO	CH ₂ OCH ₂ CH ₂ OMe	Ms	Ħ
30	$CH_zCH = CH_z$	H	MeO	CHMeOCHzCHzOMe	Ms	Ħ
30	$CH_2CH = CH_2$	Ĥ	MeO	CH ₂ NMe ₂	Ms	Ħ
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	$CH_2CH = CH_2$	H	CeK	CH ₂ CH ₂ NMe ₂	Ms	Ħ
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35	$CH_2CH = CH_2$	Ħ	CeK	CHMeOCH ₂ Ph	zK	Ħ
	CH ₂ CH = CH ₂	H	MeO	CH ₂ OCH ₂ CO ₂ Me	Ms	Ħ
	$CH_zCH = CH_z$	H	MeO	CH ₂ OCH ₂ CO ₂ Et	Жs	H
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40	$CH_zCH = CH_z$	Ĥ	MeO	CH 2CN	Ms	H
40	$CH_2CH = CH_2$	Ħ	MeO	CH₂SMe	Ms	H
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	$CH_2CH = CH_2$	H	MeO	CH _z SO _z Me	Ms .	H
45	$CH^{z}CH = CH^{z}$	Ĥ	MeO	CH _z SO _z Et	Ms	H
	$CH_2CH = CH_2$	H	MeO	CHMeSMe	aK	H
	_					H
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CH2CH=CH2 H Me0 CH2CH2CH2CMe Ms CH2CH=CH2 H Me0 CH2COOMe Ms CH2CH=CH2 H Me0 CH2ON2Me Ms CH2CH=CH2 H Me0 CH2OME Ms CH2CH=CH2 H Me0 CH2OME Ms CH2CH=CH3 H Me0 CH2OME Ms CH2CH=CH3 H Me0 CH2OME Ms CH2C ≡CH H Me0 CH2OME MeS CH2C ≡CH H Me0 CH2OME MeS CH2C ≡CH H Me0 CH2OME MeS CH2C ≡CH H Me0 CH2OME Ms	Q .	Z	Y	. X	В	<u>A</u>	
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	CH ₂ CH=CH ₂	Мe	CI	CH ₂ OCH ₂ CH = CH ₂ CH ₂ OCH ₂ C ≡ CH	Ms.	H
25	CH ₂ CH=CH ₂	Me	CI	CH ₂ OCH ₂ CH ₂ CI	Ms	H
	CH ₂ CH=CH ₂	Me	ČĪ	CHMeOH	Ms · · · · ·	H
	CH ₂ CH=CH ₂	Me	CI	CHMeOMe	Ms v-	H
	CH ₂ CH=CH ₂	Me	CI	CHMeOMe	Ms	H
	CH ₂ CH=CH ₂	Me	C1	CHMeOMe	C1	H
30	CH _z CH=CH _z	Мe	CI	Chheone CHMeOMe	MeS	H
	CH ₂ CH=CH ₂	Мe	Cl	CHMeOEt	MeSO	H
	$CH_2CH = CH_2$	Me	CI	CH ₂ CH ₂ OMe	-ÿs	H
	CH ₂ CH=CH ₂	Me	C1	CH ₂ CH ₂ OEt	ğis	H
35	$CH_2CH = CH_2$	Me	Ci	CHE tOH	្ត្រីន ម	H
	$CH_2CH = CH_2$	Me	C1	CHE tOMe	Ms u_	H
	CH _z CH=CH _z	Me	Cl	CHE tOE t	ids V	H
	$CH_2CH = CH_2$	Me	C1	CHzOCHzCHzOMe	Ms	H
	CH ₂ CH=CH ₂	Ме	C1	CH2NMez	Ms Ms	H
40	CH ₂ CH=CH ₂	Мe	C1	_ _	Ms V	H
	$CH_2CH = CH_2$	Иe	CI	CH ₂ OCH ₂ Ph	Ms M-	H
	$CH_2CH = CH_2$	Иe		CH=OCH=CO=He	ăs V -	H
	$CH_2CH = CH_2$	ие Ме	Cl Cl	CH ₂ OCH ₂ CO ₂ Et	Ms V	H
	$CH_2CH = CH_2$	Me	CI	CH=OCHMeCO=Me	Ms	H
45	CH 2CH = CH 2.	Me	CI	CH ₂ CN	Ms	H
	CH ₂ CH=CH ₂	Me		CH _z SMe	Ms	H
	$CH_2CH = CH_2$	ne Me	Cl Cl	CH ₂ SEt	Ms .	H
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	CH ₂ CH=CH ₂	Me	CI	CH2SCH2CH2OMe	Ms	Ħ
	$CH_2CH = CH_2$ $CH_2CH = CH_2$	Me Me	. C1	CH ₂ OCOMe	Ms	H
	$CH_2CH = CH_2$	Me	Cl	CHMe0COMe	zK	H
10	$CH_{2}CH = CH_{2}$	Me	Čĺ	CH ₂ OSO ₂ Me	Ms	H
	$CH_2CH = CH_2$	Me	ČĪ	CHMeOSO 2Me	Ms	H
	Ch ₂ Ch = Ch ₂ Ch = CH	Ме	Cl	CH = OH	Ms	H
	$CH_2C = CH$	Me	C1	CH=0Me	zK	H
	$CH_2C = CH$	Мe	Čĺ	CH 20Me	Cl	H
15	CH ₂ C ≡ CH	Me	ČÌ	CH ₂ OMe	MeS	H
	CH ₂ C ≡ CH	Мe	Cl	CH=0Me	MeS0	H
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20	CH ₂ C ≡ CH	Мe	CI	CH _z OE t	МеS	H
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25	CH ₂ C ≡CH	Мe	C1	$CH_zOCH_zCH = CH_z$	Ms	H
	CH ₂ C ≡CH	Me	C1	CH ₂ OCH ₂ C ≡CH	Ms	H
	$CH_2C \equiv CH$	Me	C1	CH 20CH 2CH 2C1	Ms	H
	CH ₂ C ≡ CH	Мe	CI	СНИеОН	Ms	H
30	CH ₂ C ≡CH	Йe	CI	CHMeOMe	Ms	H
	$CH_zC \equiv CH$	Мe	Cl	СНМеОМе	CI G	H H
	$CH_2C \equiv CH$	Иe	C1	СНМеОМе	MeS	n H
	$CH_zC \equiv CH$	Мe	C1	CHMeOMe	MeS0	n H
	CH ₂ C ≡CH	Мe	C1	CHMeOE:	Ms Ms	H
35	CH ₂ C ≡CH	Мe	C1	CH ₂ CH ₂ OMe	ns Ms	H II
	CH ₂ C ≡ CH	Мe	C1	CH ₂ CH ₂ OEt	ns Ms	H H H H H
	CH ₂ C ≡ CH	Мe	C1	CHE bOH	ns Ms	Ħ
	$CH_zC \equiv CH$	Мe	C1	CHE tOMe	Ms	H
40	CH ₂ C ≡ CH	Иe	CI	CHE tOE t	Ms	Ħ
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	· CH ₂ C ≡ CH	Ме	C1	CH ₂ OCH ₂ CO ₂ Ne	Ms .	H
45	CH ₂ C ≡ CH		Cl	CH ₂ OCHMeCO ₂ Me	Ms	H
	CH ₂ C ≡ CH	Мe	. CI	CH ₂ CN	Ms	H
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	CH ₂ C ≡CH	Мe	CI	CH ₂ SO ₂ St	Ms	H
10	CH ₂ C ≡ CH	Мe	C1	CH ₂ SCH ₂ CH ₂ OMe	Ms	H
	CH ₂ C ≡ CH	Мe	C1	CH ₂ OCONe	Ms	H
	CH ₂ C ≡ CH CH ₂ C ≡ CH	Me Me	Cl Cl	CHMeOCOMe CH2OSO2Me	Ms As	H H
	CH ₂ C ≡ CH	Me	C1	CHMeOSO alle	Ms	H
	CH ₂ CH=CH ₂	Me	МеО	CH ₂ OH	yz Yz	H
15	$CH_2CH = CH_2$	Me	MeO	CH ₂ OMe	Ms	Ĥ
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20	$CH_2CH = CH_2$	Мe	Me0	CH _z OE t	Ms	H
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25	CH ₂ CH=CH ₂	Me	MeO	CH ₂ OPr-i CH ₂ OPr-a	Ms Ms	П Н ·
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	$CH_2CH = CH_2$	Me	MeO	$CH_2OCH_2C \equiv CH$	Ms	H
30	$CH_2CH = CH_2$	Me	MeO	CH ₂ OCH ₂ CH ₂ CI	zK	Ħ
50	CH ₂ CH=CH ₂	Мe	MeO	CHMeOH	Ms	H
	CH2CH=CH2	Мe	MeO	СймеОме	Ms	H
	$CH_2CH = CH_2$	Мe	ИеО	CHMe0Me	CI	H
	$CH_2CH = CH_2$	Мe	MeO	CHMedMe	MeS	H
35	CH ₂ CH=CH ₂	Me	MeO	CHMeOMe	₹eS0	H
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40	$CH_2CH = CH_2$	ne Me	MeO	CHE tOMe	zK	H
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45	CH ₂ CH=CH ₂		CeM	CH ₂ OCH ₂ Ph	zK	H
-	CH _z CH=CH _z		MeO	eKrCOrHOCHO	Ms	H
	CH zCH = CH z		MeO	CH2OCH2CO2Et	Ms	H
	$CH_zCH = CH_z$	Me	ЙeО	CHzOCHMeCOzMe	Ms	H

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5	CH ₂ CH=CH ₂	Ме	МeO	CH ₂ CN	Ms	H
	$CH_2CH = CH_2$	Ме	MeO	CH _z SMe	Мs	H
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10	$CH_zCH = CH_z$	Ме	MeO	CH ₂ SO ₂ E t	2K	H
	$CH_zCH = CH_z$	Ме	MeO	CH2SCH2CH2OMe	Иs	H
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	$CH_zCH = CH_z$	Me	MeO	CHMeOCOMe	Ms	H
15	$CH_2CH = CH_2$	Me	NeO	CH ₂ OSO ₂ Me	Ms	H
15	$CH_2CH = CH_2$	Me	MeO	CHMeOSO _z Me	Ms	H
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20	CH ₂ C ≡CH	Me	MeO	CH _z OMe	MeS	H
	CH₂C ≡CH	Me	MeO	CH=OMe	MeSO	H
	CH _z C ≡CH	Мe	MeO	CH _z OE t	Мs	H
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30	CH ₂ C ≡CH	Me	MeO	$CH_2OCH_2CH = CH_2$	zĸ	H
30	CH _z C ≡CH	Ме	MeO	CH ₂ OCH ₂ C ≡CH	Ms	H
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	CH ₂ C ≡CH	Мe	MeO	CHMeOH	Ms	H
	CH₂C ≡CH	Мe	MeO	CHMeOMe	Ms	H
35	CH ₂ C ≡ CH	Ме	MeO	C#MeOMe	C1	H
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	$CH_zC \equiv CH$	Ме	CeM	CHMeOE t	Ms	H
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40	CH ₂ C ≡ CH	Хе	MeO	CH2CH2OEt	Мs	H
	CH ₂ C ≡ CH	Ме	МеО	CHE tOH	zK.	H
	CH ₂ C ≡ CH	Мe	MeO	CHE tOMe	Ms	H
	CH ₂ C ≡ CH	Me	MeO	CHE tOE t	Мs	H
45	$CH_2C \equiv CH$	Мe	Ceff	CHzOCHzCHzOMe	Жs	H
-	CH _z C ≡ CH ·		CeK	CHzNMe:	ns.	H
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	CH ₂ C ≡ CH	Me	MeO	CH=OCHzCOzMe	Ms	H

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CH _z C ≡	CH Me	MeO	CH ₂ OCHMeCO _z Me	Ms	H
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	Ме	0Me	Ме	CHMeOEt	Ms V	n r
20	Me	0Me	Ме	CH ₂ CH ₂ OMe	Ms	Ĭ.
	Ме	0Me	Ме	CH ₂ CH ₂ OE t	Ms	n T
	Ме	0Me	Ме	CHEtOMe	ğs	II.
	Me	0Me	Ме	CHE tOE t	Мs	Н
	Ие	0Me	Йe	CHzOCHzCOzMe	Иs	H
25	Me	0Me	Йe	CH₂SMe	Ms	H
	Ме	0Me	Иe	CH ₂ SE t	Ms	H
	Me	0Me	Йe	CH ₂ SO ₂ Me	Ms	H
	Ме	0Me	Ме	CH ₂ OCOMe	Ms	H
	Me	0Me	Йe	CHMeOCOMe	Ms	H
30	Мe	0Me	Йe	CH ₂ 0SO ₂ He	Ms	H
	Ме	0Me	Мe	CHMeOSO ≥Me	Ms	H
	Et	0Me	Мe	CH 20Me	Йs	H H H H
	Et	0Me	Мe	CH _z 0Et	Ms	H
35	Eŧ	0Me	Йe	CHMeOMe	Ms	H
33	Et Et	0He	Мe	CHMeOE :	Ms	<u>H</u> ·
	Et	OMe .	Ме	CH 2CH 20Me	Ms	H H H
	Et	0Me	Мe	CH2CH2OEt	ðs.	H
	Et	0Me	Йe	CHE tOMe	Мs	H
40	Εt	0Me	Мe	CHEtOEt	Ms	H
	Et	0Me	Йe	CH₂0CH₂CO₂Me	Ms	Ħ
	Et	0Me	Мe	CH ₂ SMe	Ms	H
	Et Et	0Me	Мe	CH₂SEt	Иs	H
	Et	0Me	Мe	CH ₂ SO ₂ Me	Ms	H H
45	Et	0Me	Мe	CH₂0C0Me	Ms	H ·
	Et	0Me	Мe	CHMeOCOMe	Ms	H H
	Et '	0Me	Мe	CH=0SO=Me	Ms	H
	Et	0Me	Мe	CHMeOSO _z Me	Ms	H

5	À	Ē	X	Y	Z	Q.
5	P - -i	0Me	Мe	CH₂OMe	Ms	Ħ
	Pr-i	one OMe	Иe	CH ₂ OEt	ak S	ннининининининининининининининини
	Pr-i	0Me	Не	CHMeOMe	Жs	Ä
-	Pr-i	one OMe	Ие	CHMeDE t	Ms	Ħ
10	Pr-i	one 0Me	ne Me	CH ₂ CH ₂ OMe	Ms	й
		one OMe	ne Me	CH ₂ CH ₂ OE t	Ms	Ħ
	P r -i	one OMe		CHE to He	Ms	Ħ H
	Pr-i		Ме	CHE tORE	Ms	H H
	Pr-i	oxe	Ме	CH ₂ OCH ₂ CO ₂ Me	Ms	Ħ
15	Pr-i	OMe	Ме	CH ₂ SMe	ZK	я 11
	Pr-i	0Me	Me M-	CH ₂ SEt	iis Ms	H
	Pr-i	0Me	Йe		Ms	u u
	Pr-i	0Me	Иe	CH _z SO _z Me	ns Ms	u u
20	Pr-i	0Me	Мe	CH ₂ 0COMe	ns Ms	11 11
20	Pr-i	0Me	Ме	CHMeOCOMe		11 11
	Pr-i	0Me	Иe	CH ₂ OSO ₂ Me	Ms V-	11 17
	Pr-i	0Me	Ме	CHMeOSO ≥Me	Ms	Д Ħ
	Me	0Me	C1	CH₂0Me	Яs	Д IT
25	Мe	0Me	C1	CH ₂ 0Et	Ms .	n ir
	Me	0Me	Cl	СНИеОМе	Ms	n n
	Мe	0Me	CI	CHMeOEt) is	ii.
	Мe	0Me	Cl	CH ₂ CH ₂ OMe	Ms	n .
	Мe	0Me	C1	CH ₂ CH ₂ OEt	Ms	. Н
30	Мe	0Me	Cl	CHE tOMe	Ms	H
	Мe	OMe '	C1	CHE tOE t	Ms.	Ħ
	Мe	0Me	C1	CHzOCHzCOzMe	Ms	H
•	Ме	0Me	C1	CH ₂ SMe	Ms	H
	Мe	0Me	C1	CH ₂ SE t	zĭs	H
35	Me	0Xe	Cl	CH₂SO₂Me	Ms	H
	Мe	0Me	C1	CH ₂ OCOMe	Ms	н
	Me	0Me	CI	CHMe0C0Me	Ms	H
	Мe	0Me	Cl	CH 20S0 zMe	Мs	H
	Me	0Me	CI	CHMeOSO zMe	Ms	H
40	Εŝ	0Me	Cl	CH ≥0Me	2M	H
	Et	0Me	Cl	CH 20Et	Ms	H
	Et	0Me	CI	Симеоме	Ms	<u>H</u> .
	E:	· 0116	Ċì	CHMeOE t	Ms	H
45	Eŧ	0Me	ČĪ	CH _z CH _z OMe	Ms	H H H H H
	Et	0Me	CI	CH _z CH _z OE t	Ms	H
	Et ,	0Me	Ç1	CHE tOMe	Ms	H
	Et	0Me	CI	CHE tOE t	Ms	H
		2110	<u> </u>			

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	À.	Б	X	Y	Z	Ç.
5	Et	0Me	CI	CH ₂ OCH ₂ CO ₂ Me	Ms	H
	Et	0Me	CI	CH₂S∦e	Ms	H
	Et Et	0Me	CI	CH ₂ SE t	Ms	H
	Et Et	0Me	Cl	CH ₂ SO ₂ Me	Ms	H
10	Et	0Me	Cl	CH _z 0C0Me	Ms	H
	Εt	0Me	CI	CHMe0C0Me	Ms	H
	Εt	0Me	CI	CH ₂ OSO ₂ Me	Ms	Н
	Εt	0Me	Cl	CHMeOSO _z Me	ak	Ħ
	Pr-i	0Me	Cl	CH ₂ OMe	Мs	H
15	Pr-i	0Me	CI	CH ₂ OEt	Ms	Ħ
	Pr-i	0Me	CI	CHMe0Me	Ms	
	Pr-i	0Me	C1	CHMeOE t	Ms	H
	Pr-i	0Me	CI	CHzCHzOMe	Ms	H H H H
20	Pr-i	0Me	C1	CH _z CH _z OE t	2M	H
20	Pr-i	0Me	C1	CHE tOMe	Ms	H
	Pr-i	0Me	CI	CHEtOEt	Ms	H.
	·Pr-i	0Me	CI	CH ₂ OCH ₂ CO ₂ Me	zK	H
	Pr-i	0Me	CI	CH ₂ SMe	Ms	Н — и
25	Pr-i	0Me	CI	CH ₂ SEt	2M	H H
	Pr-i	· OMe	CI	CH _z SO _z Me	Ms	Ħ
	Pr-i	0Me	CI	CH ₂ OCOMe	Ms	H
	Pr-i	0Me	CI	CHMe9C0Me	Ms	H
	Pr-i	0Me	CĪ	CH ₂ OSO ₂ Me	Мs	H H H
30	Pr-i	0Me	Cl	CHMeOSO 2Me	Ms	H

	A	Ē	Х	Y	Z	G.
	Me	SMe	Йe	C∃₂OMe	Ms	H
	Иe	SMe	Ме	CH _z OE±	Ms	H
	Иe	Side	Me	СНИеОМе	Ms	H
	Ме	SMe	Мe	· CHMeOEt	Ms	H
)	Me	SMe	Мe	CHE tOMe	Иs	H
	Me	Sife	Мe	CHE tOE t	Ms	Ħ
	Me	SMe	Cl	CH ₂ OMe	Νs	H
	Ме	SMe	Cl.	CH _z OEt	Мs	H H H H
;	Me	SMe	C1	CHMeOMe	Ms	H
	lle	SMe	Cl	CHMe0Et	Мs	H
	Et	SMe	Мe	CH₂0Me	Ms	H
	Et	SMe	Иe	CH _z OE t	Ms	H
	Et	SMe	Мe	CHMe0Me	Ms	H
)	Et	SMe	Мe	CHMeOE t	Ms	ннннннннннннннн
	Et	SMe	Мe	CHE tOMe	Ms	H
	Et	SMe	Мe	CHE tOE t	zK	H
	Et	SMe	C1	CH ₂ OMe	Ms	H
	Et	SMe	Cl	CH ₂ OEt	Ms	· H ·
	Et	SMe	CI	CHMe0Me	Ms	H
	Εt	Sine	Cl	CHMe0Et	Ms	H
	Pr-i	SMe	Йe	CH₂0Me	Ms	H
	Pr-i	SMe	Мe	CH ₂ OE t	Мs	H
,	Pr-i	Sife	Мe	CHMeOMe	Ms	H
	Pr-i	SMe	Мe	.CHMeOEt	Ms	H
	Pr-i	SMe	Мe	CHE tOMe	Ms	H
	Pr-i	SMe	Йe	CHE tOE t	Ms	H
	Pr-i	SMe	Cl	CH=OMe	zK.	H
	Pr-i	SMe	Cl	CH = OE t	Ms	H
	Pr-i	SMe	Cl	CiiMeOMe	Ms	H
	Pr-i	SMe	C1	CHMeOE t	Ms	. Н
	Мe	CH₂SMe	Йe	CH ₂ OMe	Ms	H
	Me	CH ₂ SMe	Мe	CH ₂ OE t	Мs	H
,	Me	CH _z SMe	Мe	CHMe0Me	Ms	H
	Me	CH ₂ SMe	Мe	CHMeOE t	Ms	
	Me	CH ₂ SMe	Иe	CHE tOMe	Ms	H
	Мe	'CH _z SMe	Мe	CHE tOE t	Иs	H H H H
5	Me	CH ₌ SMe	Cl	CH₂OMe	Ms	H
	Иe	CH _z SMe	C1	CH ₂ OEt	Ms	H
	Me	CH _z SMe	CI	CHMeOMe	Ms	H
	Me	CH ₂ SMe	CI	CHMeOEt	2M	H

	A		X	Y	Z	Q.
5	Et	CH 2SMe	Ме	CH _c OMe	Жs	H
	Et	CH _z SMe	Me	CH=OE t	Ms	Ħ
	Et	CH ₂ SMe	Иe	CHMeOMe	2K	Ĥ
	Et	CH ₂ SMe	Ме	CHMeOE:	en Z	Ħ
10	Et	CH ₂ SMe	Иe	CHE : OMe	Ms	H H H
	Et	CH _z SMe	Иe	CHE tOE t	Ms	Ħ
	Et	CH ₂ SMe	CI	CH _z OMe	Ms	H H
	Et	CH ₂ SMe	CI	CH = OE t	žľs	H
	Et	CH₂SMe	CI	СНИеОМе	ns.	Ĥ
15	Et	CH ₂ SMe	Cl	CHMeOEt	Ns.	H
	Pr-i	CH ₂ SMe	Йe	CH _z OMe	er. er	, <u>H</u>
	Pr-i	CH ₂ SMe	Me	CH ₂ OEt	en en	H , H H
	Pr-i	CH ₂ SMe	Иe	CHMeOMe	iis Is	Ĥ
20	Pr-i	CH _z SMe	Me	CHMeOEt	Ms	H
	Pr-i	CH ₂ SMe	Иe	CHE tOMe	en en en en en en en en en en en en en e	H H H
	Pr-i	CH _z SMe	Ме	CHE ±0E t	Ms	H
	Pr-i	CH ₂ SMe	Cl	CH ₂ OMe	Ms	Ħ
	Pr-i	CH ₂ SMe	CI	CH ₂ OE t	Ms	I
25	Pr-i	CH ₂ SMe	CI	СНИеЭМе	Ms	Ĥ
	Pr-i	CH _z SMe	CI	CHMeOEt	Ms	H
	Me	CH ₂ Cl	Me	CH ₂ OMe	Ms	H
	Me	CH ₂ Cl	Me	CH ₂ OE t	Ms	Ħ
30	Me	CH ₂ C1	Me	СНИеОМе	Ms	H H H
30	Ме	CH _z C1	Иe	CHMeOEt	Ms	H
	Ме	CH ₂ C1	Ме	CHE tOMe	Ms	Ħ
	Me	CH ₂ C1	Me	CHE tOE t	Ms	H
	Me	CH ₂ C1	C1	CH ₂ OMe	Ms	H H
35	Me	CH ₂ C1	CI	CH ₂ OE t	Ms	H
	Ме	CH _z C1	C1	CHMeOMe	Ms	H
	Me	CH ₂ C1	Ci	CHMeOEt	Ms	H H H
	Et	CH ₂ C1	Мe	CH _z OMe	Ms	H
	Et	CH ₂ C1	Иe	CH ₂ OE t	Ms	H
40	Et	CH ₂ CI	Ме	CHMeOMe	Ms	H H
	Et	CH ₂ C1	Ме	CHMeOE t	Ms	H
	Et	CH _z Cl	Мe	CHE tOMe	Жs	H
	Et	CH _z CI	Нe	CHE tOE t	Ms	H
45	Et	· CH ₂ Cl	Cl	CH 20Me	Ms	H
70	Et	CH _z CI	CI	CH _z OE t	Ms	H
	Et	CH ₂ C1	CI	CHMe0Me	Ms -	- Н Н
	Et	CH ₂ C1	Cl	CHMeOE t	Ms	H
		011 201	91	OMI COP 6		

	A	E	X	Y	Z	Q
5	Pr-i	CHzCl	Иe	CH ₂ OMe	Ms	H
	P r -i	CH ₂ Cl	Иe	CH _z OE t	Ms	H
	Pr-i	CH ₂ C1	Йe	СИМеОМе	Ms	H
	Pr-i	CH _z Cl	Me	CHMeOE:	Ms	H
9	Pr-i	CH _z Cl	Me	CHE tOMe	Ms.	H
	P r -i	CH _z C1	Йe	CHE tOE t	Ms	H
	Pr-i	CH ₂ C1	Cl	CH₂0Me	Ms	\mathbf{H}_{\perp}
	Pr-i	CH ₌ Cl	Cl	CH ₂ OE t	Ms	H
	Pr-i	CHzCI	C1	CHMeOMe	Ms	H
i	Pr-i	CH _z C1	CI	CHMeOEt	Ms	H

_	A	В	Х	Y	Z	Q.
5	Иe	H	CH₂OMe	CH ₂ OH	Ms	Н
	Мe	H	CH _z OMe	CH ₂ OMe	Ms	H
	Мe	Ħ	CH = OMe	CH ₂ OMe	C1	Ħ
	Мe	H	CH ₂ OMe	CH ₂ OMe	MeS	H H
10	Йe	H	CH ₂ OMe	CH ₂ OMe	MeS0	H
	Ме	H	CH ₂ OMe	CH ₂ OE t	Ms	H
	Мe	H	CH ₂ OMe	CH ₂ OE t	CI	H.
	Мe	H	CH ₂ OMe	CH ₂ OE t	MeS	Н Н Н Н Н Н
	Мe	H	CH ₂ OMe	CH=OE t	MeSO	Ĥ
15	Me	H	CH _z OMe	CH=OPr-i	Ms	Ħ
	Мe	Ħ	CH 20Me	CH _z OP _T -n	Ms	H H
	Мe	H	CH _z OMe	$CH_zOCH = CH_z$	Ms	Ħ
	Мe	H	CH _z OMe	CH ₂ OCH ₂ CH = CH ₂	Мs	H
20	Йe	Ħ	CH ₂ OMe	$CH_2OCH_2C \equiv CH$	Ms	H
	Мe	H	CH₂OMe	CH=OCH=CH=C1	Ms	Ĥ
	Мe	H	CH ₂ OMe	CHMeOH	Ms	H
	Мe	H	CH = OMe	CHMe0Me	Ms	Ħ
	Мe	Ħ	CH ₂ OMe	CHMe0Me	ČĪ	H H
25	Мe	H	CH₂0Me	СНМеОМе	MeS	Ĥ
	Мe	H	CH ₂ 0Me	CHMeOMe	MeS0	H
	Me	H	CH _z OMe	CHMeOE t	Ms	$\widetilde{\mathtt{H}}$
	Мe	H	CH ₂ OMe	CHMeOCH = CH ₂	Ms	Ħ
30	Мe	H	. CH ₂ OMe	CHMeOCH = CH ₂	Ms	Ĥ
30	Мe	H	CH_zOMe	CHMeOCH2CH = CH2	Ms	H .
	Мe	H	$CH_{z}OMe$	CHMeOCH _z C ≡ CH	Ms	H
	Иe	H	CH ₂ OMe	CHMeOCH 2CH 2C1	Ms	H
	Мe	H	CH ₂ OMe	CMe _z OH	Яs	H
35	Мe	H	CH _z OMe	CMe ₂ 0Me	Ms	H
	Мe	H	CH₂OMe	CMe _z OEt	Ms	H
	Me	H	CH_zOMe	CH _z CH _z OMe	Ms	H
	Нe	H	CH ₂ OMe	CH ₂ CH ₂ OE t	Ms	H
	Мe	H	CH _z OMe	CHEtOH	Ms	H :
40	Мe	H	CH z OMe	CHE tOMe	Мs	H
	Мe	H	$CH_{z}OMe$	CHE tOE t	Иs	H
	Ме	H	CH₂0Me	CHzOCHzCHzOMe	Ms	H
	Мe	H	$CH_{z}OMe$	CHMeOCH zCH zOMe	2K	H
45	Ме	• Н	CHz0Me	CH ₂ NMe ₂	Ms.	H
-	Мe	H	CH z OMe	CHMeNMe _z	Ms	H
	Me '	H	CH z OMe	CH _z CH _z NMe _z	Ms	H
	Me	H	CHzOMe	CH 20CH 2Ph	Ms	H

5	A	В	Х	Y	Z	Q.
•	Мe	H	CH ₂ OMe	CHMeOCH ₂ Ph	Мs	Н
	Мe	H	CH _z OMe	CH ₂ OCH ₂ CO ₂ Me	Ms	Ä.
	Me	Ħ	CH _z OMe	CH20CH2CO2Et	Ms	Ĥ
_	Me	H	CH ₂ OMe	oMz0CHMeCOzMe	Ms	Ħ
0	Мe	H	CH _z OMe	CH ₂ CN	Ms	Ĥ
	Мe	Ħ	CH ₂ OMe	CH _z SMe	Ms	Ħ
	Мe	Ĥ	CH ₂ OMe	CH ₂ SE t	žiš	
	Мe	Ħ	CH = OMe	CH ₂ SOMe	Ms	H
5	Мe	Ĥ	CH ₂ OMe	CH ₂ SO ₂ Me	eK	H
-	Мe	H H	CH 20Me	CH2SO2Et	Иs	H
	Мe	Ħ	CH _z OMe	CHMeSMe	Ms	Ĥ
	Ме	Ħ	CH 20Me	CHMeS0zMe	Ms	H
	Иe	Ĥ	CH ₂ OMe	CH _z SCH _z CH _z OMe	Иs	Ħ
)	Ме	Ħ	CH 20Me	CH ₂ OCOMe	Ms	Ħ
	He	Ħ	CH ₂ OMe	CHMe0C0Me	Ms	H
	Ме	Ħ	CH = OMe	CH _z 0S0 _z Me	Ms	Ħ
	Me	H	CH 20Me	CHMeOSO 2.Me	iis 2K	ij
	Et	Ħ	CH 20Me	CH ₂ OH	Ms	H
i	Et	H	CH ₂ OMe	CH ₂ 0Me	en eK	Ħ
	Et	Ħ	CH 20Me	CH ₂ OMe	Ci	Ħ
	Et	Ħ	CH 20Me	CH ₂ 0Me	MeS	Н Я Н
	Et	H	CH ₂ OMe	CH ₂ 0Me	MeSO	Ħ
)	Et	H	· CH ₂ OMe	CH ₂ OEt	Ms	H
,	Et	H	CH _z OMe	CH ₂ OE t	C1	H
	Et	H	CH 20Me	CH ₂ OEt	MeS	H
	Et	H	CH ₂ OMe	CH ₂ OE t	MeSO	Ħ
	Εt	H	CH ₂ OMe	CH ₂ OPr-i	- Ms	H
5	Et	H	CH ₂ OMe	CH ₂ OPr-a	Ms	H
	Et	H	CH ₂ OMe	$CH_{2}OCH = CH_{2}$	iis Is	H.
	Éŧ	H	CH ₂ OMe	$CH_2OCH - CH_2$ $CH_2OCH_2CH - CH_2$	Ms	H H H
	Et	H	CH ₂ OMe	CH ₂ OCH ₂ C ≡ CH	Ms	H
	Et	H	CH ₂ OMe	CH ₂ OCH ₂ CH ₂ Cl	Ms	H H H
)	Et	H	CH ₂ OMe	CHMeOH	zK zK	H H
	Εŧ	H	CH ₂ OMe	CHMeOMe	Ms	H
	Et	п Н		CHMeUMe CHMeUMe	Cl	H
	Et		CH₂OMe	Caneone Caneone	MeS	H
		. Н Н	CH 20Me	Chheone CHMeOMe	MeSO	H H H
5	Et		CH₂Oñe	Chriedrie CHMeOEt	ห้อ เ	H
	Et,	H H	CH₂OMe CH₂OMe	$CHMeOCH = CH_z$	ns Ns	H
	Et Et	n H		CHMeOCH = CH ₂	ns Ms	H
	EL	п.	CH ₂ OMe	Cimeocii — Cita	112	

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5			Λ.		4	କ୍
	Et	H	CH ₂ OMe	CHMeOCHzCH = CHz	Ms	H
	Et	H	$CH_{z}OMe$	CHMeOCH ₂ C≡CH	Мs	Ĥ
	Εċ	H	CH=OMe	CHMeOCH zCH zCI	Ms	. Н Н
10	Εŧ	H	CH ≥OMe	CMe _z OH	Ms	H
10	Et	H	CH_zOMe	CMe ₂0Me	Жs	H
	Et	H	. CH₂OMe	CMez0E:	Ms	H H
	Et	H	CH 2OMe	CH _z CH ₂ OMe	Ms	H
	Et	H	${\tt CH}_{ t 2}{\tt OMe}$	CH ₂ CH ₂ OE t	Иs	H
15	Et	H	CH₂OMe	CHE toh	Мs	H
	Et	H	$CH_{2}OMe$	CHE tOMe	Ms	H
	Εt	H	CH₂OMe	CHE tOE t	Жs	H
	Et	Ħ	CH ₂ OMe	$CH_{z}OCH_{z}CH_{z}OMe$	Ms	H
	Et	H	CH_zOMe	CHMeOCHzCHzOMe	Мs	H
20	Et	H	CH _z OMe	CH ₂ NMe ₂	Ms	H H H H H H H H H H
	Et	Ħ	CH ₂ OMe	CHMeNMe z	Ms	Ħ
	Et	H	CH 20Me	CH2CH2NMe2	Ms	H
	Et	H	CH ₂ OMe	CH2OCH2Ph	Ms	H
25	Et	H	CH ₂ OMe	CHMeOCH ≥Ph	· - Ms ·	H
	Et	H H	CH₂OMe	CH2OCH2CO2Me	Ms	H
	Et	H	CH _z OMe	CHzOCHzCOzEt	Ms	H
	Et Et	H	CH ₂ OMe	CHzOCHMeCOzMe	Ms	H
		H	CH ₂ OMe	CH ₂ CN	Ms	H
30	Et Et	H H	CH₂OMe	CH ₂ SMe	Мs	H
	Et	п Н	CH _z OMe	CH _z SEt	Ms V	H
	Et	H H	CH₂OMe	CH ₂ SOMe	Ms ·	H
	Et	H	CH ₂ OMe CH ₂ OMe	CH ₂ SO ₂ Me	Ms	H
35	Et	H	CH ₂ OMe	CH ₂ SO ₂ E: CHMeSMe	Иs Ч	H
	Et	H	CH ₂ OMe	CHMeSO _z Me	ak Ks	H H
	Ē	H	CH ₂ OMe	CH ₂ SCH ₂ CH ₂ OHe	ns Ms	H
	Et	H	CH ₂ OMe	CH ₂ OCOMe	ns Ns	H .
	Et	Ĥ	CH _z OMe	CHMe0C0Me	ns Ns	H
40	Et	H	CH ₂ OMe	CH ₂ OSO ₂ Me	Ms	H
	Εt	H	CH _z OMe	CHMeOSO ₂ Me	Ms	H
	Pr-i	Ĥ	CH ₂ OMe	CH ₂ OH	Ms	
	Pi	Ħ	CH ₂ OMe	CH ₂ OHe	Ms	. <mark>й</mark>
45	Pr-i	· #	CH _z OMe	CH ₂ 0Me	Cl	H H H
	P r -i	H	CH ₂ OMe	CH ₂ OMe	MeS	Ħ
	P r -i	Ĥ	CH ₂ OMe	CH ₂ OMe	MeSO	Ĥ
	Pr-i	Ħ	CH _z OMe	CH _z 0Et	Ms	Ĥ
						

5	A	В	Х	Y	Z	Q
5	Pr-i	Ħ	CH ₂OMe	CH ₂ OE t	Cl	H
	Pr-i	Ħ	CH = OMe	CH₂0E t	MeS	Ħ
	P r -i	H	CH ₂ OMe	CH ₂ OEt	MeSO	H H H H H
	Pr-i	H	CH ₂ OMe	CH ₂ OPr-i	Ms.	Ĥ
10	Pr-i	Ĥ	CH ₂ OMe	CH ₂ OPr-n	Ms.	H
	Pr-i	Ħ	CH ₂ OMe	CH ₂ OCH = CH ₂	Ms	Ħ
	Pr-i	H	CH ₂ OMe	$CH_2OCH_2CH=CH_2$	Ms	Ħ
	Pr-i	Ħ	CH _≈ OMe	CH ₂ OCH ₂ C ≡CH	zK	Ħ
15	P=-i	Ħ	CH ₂ OMe	CH2OCH2CH2C1	Мs	Ħ
75	P r -i	Ħ	CH _z OMe	СНМеОН	Ms	
	Pr-i	H	CH _z OMe	СНМеОМе	Ms	Ħ
	Pr-i	Ħ	CH ₂ OMe	СНМеОМе	C1	Ħ
	Pr-i	H	CH ₂ OMe	СЯМеЭМе	MeS	H
20	Pr-i	Ħ	CH ₂ OMe	CHMeOMe	MeSO	H H H H H
	P r -i	Ħ	CH ₂ OMe	CHMeOEt	Мs	H
	P r -i	H	CH _z OMe	CHMeOCH = CH2	Ms	H
	Pr-i	Ħ	CH ₂ OMe	CHMeOCH = CH ₂	Ms	H H
	Pr-i	Ĥ	CH ₂ OMe	CHMeOCHzCH = CHz	Ms	H
25	Pr-i	H	CH₂OMe	CHMeOCH ₂ C≡CH	Мs	H H H H
	Pr-i	Ĥ	CH ₂ OMe	CHMeOCH 2CH 2CI	Ms	H
	Pr-i	H	CH ₂ OMe	CMe = OH	Ms	Н
	Pr-i	H	CH ₂ OMe	CMe _z 0Me	Ms	H
30	Pr-i	H	. CHzOMe	CMe _z OEt	Ms	H
•••	Pr-i	H	CH _z OMe	CH ₂ CH ₂ OMe	Мs	H
	Pr-i	H	CH 20Me	CH ₂ CH ₂ OE t	Ms	H
	Pr-i	H	CH _z OMe	CHE toh	Ms	H
	Pr-i	H	CH 20Me	CHE tOMe	Ms	H
35	Pr-i	H	CH ₂ OMe	CHE tOE t	Мs	H
	Pr-i	H	CH:OMe	CHzOCHzCHzOMe	Ms	H H H H
	^Pr−i	H	CH _z OMe	CHMeOCH zCH zOMe	Ms	H
	P - -i	Н .	CH _z OMe	CH ₂ NMe ₂	Ms	H
40	Pr-i	H	CH ₂ OMe	CHMeNMe _z	Ms	H
40	Pr-i	H	CH ₂ OMe	CH 2CH 2NMe 2	Ms	н
	P;-i	H	CH _z OMe	CH2OCH2Ph	Ms	H
	Pr-i	H	CH ₂ OMe	CHMeOCH 2Ph	Иs	H
	Pr-i	H	CH₂0Me	CH zOCH zCO zMe	Ms	Ħ
45	Pr-i	. н	CH _z OMe	CH 20CH 2CO ZE t	Ms .	H.
	Pr-i	H	CH _z OMe	CH z OCHMeCO z Me	Ms	n n
	Pr-i	H	CHzOMe -	CH ₂ CN	Ms	H H H H
	Pr-i	H	CH ₂ OMe	CH ₂ SMe	Ms	n

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	<u> </u>	Б	X	Y	Z	Q
5	Pr-i	H	CH _≈ OMe	CH ₂ SE t	Мs	H
	Pr-i	H	CH₂OMe	.CH ₂ SOMe	Жs	H
	Pr-i	H	CH_zOMe	CH ₂ SO ₂ Me	Ms	H
	Pr-i	H	CH _z OMe	CH _z SO _z Et	Ms	H
10	Pr-i	H	CH _z OMe	CHMeSMe	Ms	Ħ
,,,	Pr-i	H	CH ₂ OMe	CHMeSO _z Me	Ms	H
	Pr-i	H	CH ₂ OMe	CHzSCHzCHzOMe	Иs	$ar{\mathtt{H}}$
	Pr-i	H	CH ₂ OMe	CH = OCOMe	Ms	H
	Pr-i	H	CH₂OMe	CHMe0C0Me	Иs	H
15	Pr-i	H	CH _z OMe	CH=OSO=Me	Ms	Ħ
	Pr-i	H	CH₂OMe	CHMeOSO _z Me	Ms	Ħ

5	A	E	X	Y	Z	હ
3	Me	Ме	CH:OMe	CH _z OH	Иs	H
	Ме	Me	CH 20Me	CH ₂ OMe	XIS.	Ħ
	Me	Жe	CH z OMe	CH = OMe	Cl	Ħ
	Ме	Ме	CH _z OMe	CH ₂ OMe	MeS	Ħ
10	Ме	Не	CH ₂ OMe	CH₂OMe	MeSO	Ĥ
	Ме	Ме	CH _z OMe	CH=0Et	Ms	Ħ
	Ме	Ме	CH ₌ OMe	CH ₂ OE t	ČI	Ħ
	Ме	Me	CH ₂ OMe	CH ₂ OE t	MeS	Ħ
15	Ме	Ме	CH ₂ OMe	CH ₂ OE t	MeSO	H
	Me	Me	CH _z OMe	CHzOPr-i	Ms	H
	Me	Ме	CH ₂ OMe	CH ₂ OPr-n	Ms	H
	Me	Иe	CH ₂ OMe	CH ₂ OCH = CH ₂	Ms	Ħ
	Ме	Иe	CH ₂ OMe	CH ₂ OCH ₂ CH=CH ₂	Ms	H
20	Ме	Me	CH ₂ OMe	CH ₂ OCH ₂ C ≡ CH	Ms	H
	Ме	Ме	CH ₂ OMe	CH2OCH2CH2CI	Ms	H
	Me	Ме	CH ₂ 0Me	СЖМеОН	Ms	H
	Me	Ме	CH _z OMe	CHMeOMe	Ms	H
	Me	Ме	CH ₂ OMe	СНМеОМе	C 1	H
25	Ме	Ме	CH ₂ OMe	CHMe0Me	MeS	H
	Ме	Ме	CH ₂ OMe	CHMeOMe	MeSO	H
	Me	Ме	CH ₂ OMe	CHMeOEt	Ms	H
	Me	Ме	CH ₂ OMe	CH _z CH _z OMe	Ms	H
30	Ме	Мe	CH ₂ OMe	CH ₂ CH ₂ OEt	Ms	H
•••	Ме	Ме	CH₂0Me	CHE ±OH	Ms	H
	Мe	Ме	CH ₂ 0Me	CHE tOMe	∘Ms	H
	Мe	Ме	CH=0Me	CHE tOE t	Ms	H
	Мe	Me	CH₂0Me	CHzOCHzCHzOMe	zК	H
35	Мe	Мe	CH=OMe	CHaMMea	ZК	H
	Мe	Мe	CH₂0Me	CH ₂ OCH ₂ Ph	Ms	H
	Мe	Ме	CH=OMe	CHzOCHzCOzMe	Ms	H
	Мe	Мe	CH₂0Me	CH ₂ OCH ₂ CO ₂ Et	Ms	H
40	Мe	Мe	CH=OMe	CHzOCHMeCOzMe	Мs	
~∪	Мe	Me	CH ₂ OMe	CH₂CN	Ms	H
	Me	Ме	CH₂0Me	CH _z SMe	Мs	
	Me	Ме	CH₂0Me	CH ₂ SEt	Ms	H
	Me	. Me	$CH_{2}OMe$	CH z SO z Me	Ms	H H H H
45	Me	Мe	CH₂OMe	CH _z SO _z Et	Ms	H
	Мe	Мe	CH ₂ OMe	CHzSCHzCHzOMe	Ms	Ħ
	Me '	Мe	CH₂OMe	CH _z OCOMe	Ns.	H
	Me·	Ме	CH _z OMe	CHMe0C0Me	Ms	H

5	A	2	Х	Y	Z	Ę.
J	Me	Ме	CH ₂ 0Me	CH = OSO = Me	Ms	Н
	Мe	Мe	CH ₂ OMe	CHMeOSO _z Me	Ms	Ħ
	Εt	Ме	CH = OMe	CH = OH	Ms	Ħ
	Εt	Ме	CH = OMe	CH 20Me	Ms	Ħ
10	Εt	Мe	CH zOMe	CH ₂ OMe	CI	Ħ
	Εt	Ме	CH ₌ OMe	CH ₂ OMe	MeS	Ĥ
	Εċ	Мe	CH₂0Me	CH=OMe	MeSO	Ħ
	Εt	Me	CH_OMe	CH _z OE t	Ms	Ĥ
15	Εt	Хe	CH = OMe	CH = OE t	C1	Ĥ
	Εt	Ме	CH 20Me	CH _z OE t	MeS	Ĥ
	Et	Жe	CH ₂ OMe	CH ₂ OE t	MeSO	Ĥ
	Εt	Me	CH _≂ 0Me	CH ₂ OPr-i	Иs	H
	Εt	Мe	CH 20Me	CH ₂ OPr-n	Ms	H
20	Εt	Иe	CH 20Me	$CH_zOCH = CH_z$	Ms	H
	Et	Мe	CH 20Me	$CH_2OCH_2CH = CH_2$	Мs	H
	Et	Ме	CH 20Me	CH ₂ OCH ₂ C ≡CH	Мs	ннннннннян
	Εţ	Ме	CH _z OMe	CHzOCHzCHzCI	Ms	H
25	Εt	Ме	CH ≥0Me	СНМеОН	Ms	Н
23	Εt	Мe	CH ₂ OMe	CHMe0Me	Ms	H
	Ξt	Мe	CH ≥0Me	CHMeOMe	C1	Н Н Н Н Н
	Εt	Ме	CH ≥OMe	СНМеОМе	MeS	Н
	Εt	Иe	CH zOMe	CHMeOMe	MeSO	H
30	Et	Ие	. CH ₂ OMe	CHMeOE t	Ms	H
	Et	Йe	CH ₂ OMe	CH ₂ CH ₂ OMe	Ms	H
	Et	Ме	CH₂OMe	CH ₂ CH ₂ OE t	Ms	H
	Et	Ме	CH _z OMe	CHE toh	Ms	H
	Εt	Ме	CH ₂ OMe	CHE tOMe	Мs	H
35	Et	Ме	CH₂0Me	CHE tOE t	Ms	H
	Et	Ме	CH₂0Me	CH2OCH2CH2OMe	ils	H
	Et	Йe	CH 20Me	CH ₂ MMe ₂	Ms	H
	Et	Ме	CH₂0Me	CH2OCH2Ph	zľí	H
40	Et	Ме	CH ≥OMe	CH2OCH2CO2Me	Ms	H
	Et	Ме	CH ≥OMe	CH2OCH2CO2Et	Жs	H
	Et	Ме	CH ≥OMe	CH2OCHMeCO2Me	Ms	H
	Et	Йe	CH 20Me	CH=CN	Яs	H
	Εt	Йe	CH = OMe	CH _z SMe	Ms	H
45	Es	·Me	CH₂OMe	CH _z SE t	Ms	H
	Et	Me	CH₂0Me	CH ₂ SO ₂ Me	Ms .	H .
	Et '	Йe	CH ₂ OMe	CH _z SO _z E _z	Ms	H
	Et	Ме	CH ₂ OMe	CH ₂ SCH ₂ CH ₂ OMe	Ms	H

	A	Е	Х	Y	Z	Ç.
5	Et	Me	CH ₂ OMe	CH=OCOMe	Ms	H
	Es	Ме	CH ₂ OMe	CHMeOCOMe	Ms	Ħ
	Ēŧ	Ме	CH₂OMe	CH ₂ OSO ₂ Me	zK	Ħ
	Et	Ме	CH ₂ OMe	CHMeOSO zHe	Ms	H
10	Pr-i	Ме	CH ₂ OMe	CH ₂ OH	Жs	Ħ
	Pr-i	Ме	CH ₂ OMe	CH₂OMe	Ms	Ħ
	Pr-i	Ме	CH ₂ OMe	CH₂0Me	CI	Ħ
	P r -i	Иe	CH ₂ OMe	CH ₂ 0Me	MeS	Ħ
	Pr-i	Ме	CH ₂ OMe	CH₂OMe	MeSO	Ħ
15	Pr-i	Ме	CH _z OMe	CH ₂ OE t	Ms	Ħ
	Pr-i	Ме	CH ₂ OMe	CH ₂ 0E t	C1	ਸ਼ੌ
	Pr-i	Ме	CH ₂ OMe	CH ₂ OE t	ИeS	Ä
	Pr-i	Ме	CH _z OMe	CH ₂ OE t	MeSO	ਸ
20	Pr-i	Иe	CH ₂ OMe	CH _z OPr-i	Ms	Ĥ
	Pr-i	Ме	CH ₂ OMe	CH ₂ OP _T -n	Ms	Ħ
	Pr-i	Ме	CH ₂ OMe	$CH_zOCH = CH_z$	Ms	Ħ
	Pr-i	Ме	CH ₂ OMe	$CH_2OCH_2CH = CH_2$	Ms	Ħ
	P r -i	Ме	CH ₂ OMe	$CH_2OCH_2C \equiv CH$	Ns ·	- H
25	Pr-i	Иe	CH ₂ OMe	CH ₂ OCH ₂ CH ₂ Cl	Ms	Ħ
	Pr-i	Ме	CH ₂ OMe	CHMeOH	Ms .	ннинининнинниннинниннинниннинниннинн
	Pr-i	Ме	CH _z OMe	CHMeOMe	2K	Ĥ
	Pr-i	Ме	CH ₂ OMe	CHMe0Me	CI	Ħ
	P r -i	lle	CH _z OMe	СИМеОМе	MeS	H
30	Pr-i	Ме	CH₂0Me	CHMeOMe	MeSO	Ĥ
	Pr-i	Ме	CH ₂ OMe	CHMeOE t	Ms	H
	Pr-i	Иe	CH ₂ 0Me	CH ₂ CH ₂ OMe	Ms	H
	P r -i	Ме	CH ₂ OMe	CH ₂ CH ₂ OE t	Мs	H
35	Pr-i	Ме	CH₂0Me	CHE tOH	Ms	H
	P r -i	Ме	CH₂0Me	CHE tOMe	Мs	H
	Pr-i	Мe	CH ₂ OMe	CHEtOEt	Μs	H
	Pi	Мe	CH₂0Me	CH2OCH2CH2OMe	Мs	H
	Pr-i	Мe	CH _z OMe	CHzNMez	Ms	H
40	Pr-i	Мe	CH _z OMe	CH 20CH 2Ph	Жs	H .
	Pr-i	Мe	CH _z OMe	CH ₂ OCH ₂ CO ₂ Me	Мs	H
	P r -i	Мe	CH ₂ OMe	CH2OCH2CO2Et	zК	H
	P r -i	Ме	CH _z OMe	CH z OCHMeCO zMe	Жs	H H H H
45	Pr-i	Мe	CH ₂ OMe	CH ₂ CN	Ms	H
40	Pr-i	Мe	CH = OMe	CH ₂ SMe	Ms	H
	Pr-i	Me	CH _z OMe	CH ₂ SE t	Ms	H
	Pi	Мe	CH _z OMe	CH 2SO zife	zľ	H .

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A	E	X	Y	Z	G.
Pr-i	Мe	CH _z OMe	CH _z SO _z Et	Нs	H
Pr-i	Иe	CH ₂ OMe	CH ₂ SCH ₂ CH ₂ OMe	Ms	Ħ
Pr-i	Мe	CH ₂ OMe	CH 20COMe	Ms	Ĥ
Pr-i	Мe	CH _z OMe	CHMeOCOMe	Ms	Ħ
Pr-i	Жe	CH ₂ OMe	CH 20S0 zHe	Ms	H
Pr-i	Мe	CH ₂ OMe	CHMeOSOzMe	Ms	H

5	A	В	X	Y	Z	Q.
)	Me	H	Pr-i	CH _z OMe	Иs	H
	Ме	H	Pr-i	CH ₂ OEt	Ms	H
	Ме	H	Pr-i	CHMeOMe	Ms	H
	Ме	Ħ	Pr-i	CHMeOEt	Ms	H
0	Me	Ĥ	Pr-i	CHE tOMe	Ms	H
	Me	H	Pr-i	CHE tOE t	Ms	H
	Мe	H	P r -i	CH ₂ Sile	Ms	H
	Ме	H	Pr-i	CH ₂ SE t	Ms	H
_	Ме	H	P r -i	CH ₂ SO ₂ Me	Ms	H H H H
5	Me	Ħ	Pr-i	CH ₂ OCOMe	Ms	H
	Me	H	P r -i	CHMe0C0Me	Ms	H
	Me	Ħ	Pr-i	CH _z OSO _z Me	Ms	Ħ
	Me	H	Pr-i	CHMeOSO ₂ Me	Ms	H
9	Et	H	Pr-i	CH ₂ OMe	zK	H
	Et	H	Pr-i	CH ₂ OE t	Ms	H
	Et	H	Pr-i	CHMeOMe	Ms	Ħ
	Et	H	Pr-i	CHMeOEt	Ms	H
	Et	H	Pr-i	CHE tOMe	Ms	Ĥ
5	Et	H	Pr-i	CHE tone	Ms	H
	Et	H	Pr-i	CH ₂ SMe	Ms	· · · H
	Et	H	Pr-i	CH ₂ SEt	Ms	H
	Et	H	Pr-i	CH ₂ SO ₂ Me	Ms	Ħ
		n H	· Pr-i	CH ₂ OCOMe	Ms	Ĥ
0	Et	п Н	Pr-i	CHMe0COMe	Ms	Ħ
	Et		Pr-i	CH ₂ OSO ₂ Me	Ms	H H H H H
	Et	H .	Pr-i	CHMeOSO ₂ Me	Ms	ਸ
	Et	H H	Pr-i	CH ₂ OMe	Ms	Ĥ
5	Pr-i		Pr-i	CH ₂ OEt	žis Žis	Ä
,	Pr-i	H	Pr-i	CHMeOMe	ž. Ž	Ĥ
	Pr-i	H		CHMeOEt	Ms	H H H H H
	Pr-i	H	Pr-i	CHE tOMe	Ms	Ħ
	Pr-i	H	Pr-i	CHE torie CHE to Et	Ms	Ä
9	Pr-i	H	Pr-i	CH ₂ SMe	Ms	Ħ
	Pr-i	H	Pr-i		Ms	Ħ
	Pr-i	H	Pr-i	CH₂SEt	iis As	Ĥ
	Pr-i	H	Pr-i	CH ₂ SO ₂ Me	en eK	Ä
	Pr-i	H	Pr-i	CHzOCOMe CHMeOCOMe	en en	H H H H
5	Pr-i	. Н	Pr-i	CH ₂ OSO ₂ Me	ns Ns	Ĥ
	Pr-i	H	Pr-i	CHMeOSO zMe	Ms	Ħ
	Pr-i	H	Pr-i		Ms	Ë
	Me	Me	Pr-i	CH ₂ OMe	110	

		•				•
5	A .	В	Х	Y	Z	Q
_	Ме	Ме	Pr-i	CH ₂ OEt	Ms	H
	Ме	Ме	Pr-i	СНМеОМе	Ms	H
	Мe	Ме	Pr-i	CHMeOE t	Мs	Н Н Н Н Н Н Н Н Н Н Н Н Н Н Н Н Н Н Н
10	Ме	Ме	Pr-i	CH ₂ SMe	Ms	H
70	Ме	Мe	P r −i	CH _z SO _z Me	Ms	H
	Et	Me	Pr-i	CH₂OMe	Ms	H
	Et	Me	Pr-i	CH ₂ OEt	Мs	H
	Et	Ме	Pr-i	CHMe0Me	2K	H
15	Et	Ме	Pr-i	CHMeOEt	Ms	H
	Et	Ме	Pr-i	CH₂SMe	Ms	H
	Et	Ме	Pr-i	CH ₂ SO ₂ Me	Ms	H
	Pr-i	Ме	Pr-i	CH ₂ OMe	Ms	H
	Pr-i	Ме	Pr-i	CH ₂ OEt	Ms	H
20	Pr-i	Ме	Pr-i	CHMeOMe	Ms	H
	Pr-i -	Ме	Pr-i	CHMeOE t	Ms	H
	Pr-i	Ме	Pr-i	CH₂SMe	Ms	H
	Pr-i	Мe	Pr-i	CH ₂ SO ₂ Me	Мs	H
25	Me	H	F .	CH₂OMe	Ms	<u>. H</u>
	Me	H	F	CH ₂ OEt	Ms	H
	Me	H	F	CHMe0Me	Ms	H
	Et	H	F	CH₂OMe	Ms	H
	Et	H	<u>F</u>	CH ₂ OEt	Ms	H
30	Et	H	- <u>F</u>	CHMe0Me	Ms	H
	Et	H	F	CHMeOE t	Ms	H
	Pr-i	H	.F	CH ₂ OMe	Ms V-	H H
	Pr-i	H	F	CH ₂ OEt	Ms	П
35	Pr-i	H	F	CHMeOMe	Ms M-	H H
33	Ме	Ме	F	CH₂OMe	Ms Ms	H ·
	Ме	Иe	F	CH ₂ OEt	ris Ms	H
	Ēt	Me	F	CH ₂ OMe	ns Ms	II.
	Et	Ме	F	CH ₂ OE t CHMeOMe	ns Ms	H H
40	Et .	Me	F		ns Ms	H
	Pr-i	Me	F F	CH ₂ OMe	ns Ms	H
	Pr-i	Ме		CH _z OEt	ns Ns	H
	Ме	H	NO ₂	CH ₂ OHe	ns Ms	H
	Мe	· H	NO 2	CH ₂ OE t CHMeOMe	ris Ms	11 T .
45	Ме		NO z	Chneune CH ₂ OMe	ns Ms	H H H
	Et	H	NO 2		Ms	H
	Et	H H	NO ₂	CH ₂ OEt	ns Ms	H
	Et	n	NO ₂	CHMeOMe	fis —	11

5	A	В	X	Y	Z	Ę.
J	Et	Ħ	NOz	CAMeOEt	Мs	H
	Pr-i	Ħ	NOz	CH₂0Me	Ms	Ħ
	Pr-i	H	ИОz	CH ₂ OEt	Ms	Ĥ
	Pr-i	H	NOz	CHMeOMe	Ms	Ħ
10	Мe	Ме	NOz	CH₂0Me	Ms	Ħ
	Мe	Ме	NOz	CH ₂ OEt	Ms	Ħ
	Εt	Мe	NO ₂	CH₂0Me	Мs	Ħ
	Εŧ	Ме	NO ₂	CH ₂ OEt	Ms	H
15	Εī	Me	NOz	CHMeOMe	Жs	H
,,	Pr-i	Мe	NO ₂	CH₂0Me	Ms .	Ħ
	Pr-i	Me	NOz	CH ₂ OEt	Мs	Ħ
	Мe	H	CF ₃	CH ₂ 0Me	Ms	H
	Me	H	CF ₃	CH ₂ OEt	Ms	Ħ
20	Мe	H	CF 3	CHMe0Me	Яs	H
	Et	H	CF ₃	CH 20Me	Ms	H
	Et	H	CF ₃	CH ₂ OEt	Иs	Ħ
	Et	H	CF ₃	CHMeOMe	Ms	Ĥ
	Et	H	CF ₃	CHMeOE t	Ms	нннынныннынынынныннынынынынын
25	Pr-i	H	CF ₃	CH 20Me	Ms	Ħ
	Pr-i	H	CF ₃	CH ₂ OEt	Ms	Ħ
	′Pr-i	H	CF ₃	CHMeOMe	Ms	H
	Ме	Me	CF ₃	CH ₂ OMe	Ms	H
30	Мe	Ме	· CF ₃	CH ₂ OE t	Ms	H
40	Et	Ме	CF ₃	CH ₂ OMe	Ms	H
	Et	Me .	CF ₃	CH _z OEt	Ms	Н .
	Et	Ме	CF ₃	CHMeOMe	Ms	H
	Pr-i	Ме	CF ₃	CH ₂ OMe	Ms	H
35	Pr-i	Мe	CF ₃	CH _z OE t	Ms	H
	Ме	H	COCH ₃	CH ₂ OMe	Ms	H
	Йe	H	COCH3	CH _z OEt	Ms	Ħ
	Et	H	COCH3	CH ₂ OMe	Ms	H
	Et .	H	COCH ₃	CH ₂ OEt	Ms	H
40	Et	H	COCH3	CHMeOMe	Ms	H
	Pr-i	H	COCH3	CH ₂ OMe	Ms	
	Pr-i	Н	COCH3	CH ₂ OEt	its	H
	Me	Мe	COCH ₃	CH ₂ OMe	Ms	H
45	Et	· Me	COCH3	CH ₂ OMe	Ms ·	H H
	Et	Ме	COCH ₃	CH ₂ OEt	Ms	H
	Pr-i '	Me	COCH ₃	CH _z OMe	Ms	Ħ
	Me ·	H	SCH3	CH ₂ OMe	Ms	H

				 		
5	A	В	X	Y	· Z	Q
	Ме	H	SCH ₃	CH z CE t	Ms	H
	Et	H	SCH₃	CH _z OMe	Ms	Ħ
	Εt	H	SCH₃	CH ₂ OE t	zK.	Ĥ
10	Et	H	SCH₃	CHMeOEt	Ms	H
	Pr-i	H	SCH₃	CH₂0Me	Ms	Ħ
	Ме	Иe	SCH₃	CH ₂ OMe	Ms	Ĥ
	Et	Ие	SCH ₃	CH ₂ OMe	Мs	Ĥ
	Εt	Ме	SCH ₃	CH ₂ OE t	Ms	H H H H H H
15	Pr-i	Иe	SCH ₃	CH ₂ OMe	Ms	Ħ
	Ме	H	OCHF 2	CH ₂ OMe	Ms	Ħ
	Мe	H	OCHF 2	CH20Et	Мs	Ħ
	Et	H	OCHF ₂	CH₂0Me	Ms	Ħ
	Et	Ħ	OCHF _z	CH ₂ OE t	Ms	Ħ
20	Et	H	OCHF ₂	CHMeOE t	Ms	Ħ
	Pr-i	H	OCHF 2	CH ₂ OMe	Ms	Ħ
	Pr-i	Ħ	OCHF ₂	CH ₂ OE t	Ms	Ä
	Me	Ме	OCHF ₂	CH₂0Me	Ms	, j
25	Me	Ме	OCHF ₂	CH ₂ OE t	Ms	Ħ
20	Et	Me	OCHF ₂	CH₂0Me	Ms	H
	Et	Йe	OCHF _z	CH _z OE t	Ms	Ĥ
	Pr-i	Ме	OCHF _z	CH ₂ OMe	Ms	H
	Pr-i	Мe	OCHF _z	CH ₂ OE t	Ms	H H
30	Ме	H	OCF ₃	CH₂0Me	Ms	H
	Ме	H	OCF ₃	CH ₂ OE t	Ms	H
	Et	H	OCF ₃	CH ₂ OMe	Ms	H
	Et	H	OCF ₃	CH ₂ OEt	Ms	H
	Et	H	OCF ₃	CHMeOEt	Ms	H
35	Pr-i	H	OCF ₃	CH ₂ OMe	Ms	H H
	Pr-i	H	OCF ₃	CH ₂ OE t	Мs	Н.
	Me	Мe	OCF₃	CH ₂ 0Me	Ms	H H
	Eŧ	Ме	OCF ₃	CH₂0Me	Ms	H
40	Et	Me	OCF ₃	CH ₂ OEt	Ms	H
	Pr-i	Ме	OCF ₃	CH ₂ OMe	Ms	Ħ
	Me	H	CH _z SMe	CH₂0Me	Ms	H
	Et	H	CH ₂ SMe	CH ₂ OMe	Ms	H
	Et	·H	CH _z SMe	CH ₂ OEt	Ms	H
45	Et	H	CH ₂ SMe	CHMeOE t	Ms	H
	Pr-i	H	CH ₂ SMe	CH ₂ OMe	Ms	<u>H</u> -
	Pr-i	H	CH ₂ SMe	CHMeOMe	Ms	H
	Me .	Me	CH ₂ SMe	CH _z OMe	Ms	H

	_A	В	X	Y	Z	Q
	Et	Ме	CH _z SMe	CH ₂ OMe	Ms	H
	Et	Мe	CH ₂ SMe	CH ₂ OEt	Ms	Ħ
	Pr-i	Ме	CH₂SMe	CH ₂ OMe	Ms	H
	Me	H	CN	CH ₂ OMe	Ms	H
)	Et	H	CN	CH ₂ OMe	iis Iis	H
	Et	Ħ	CN	CH ₂ OEt	ns Ns	H
	Pr-i	H	CN	CH ₂ OMe	iis iis	П U
	Ме	и Ме	CN CN	CH ₂ OMe		H H H H H H
	Et	ne Me	C.Y		Мs ¥-	П
;				CH ₂ 0Me	Яs	H
	Pr-i	Ме	CA A	CH₂OMe	Ms.	H
	Ме	H	C0₂Me	CH₂OMe	Ms	<u>H</u>
	Et	H	CO₂Me	CH₂OMe	Ms	н
	Et	H	C0 z Me	CH ₂ OEt	Ms	H
)	Pr-i	H	C0 zMe	CH ₂ OMe	Ms	H
	Ме	Ме	C0 ₂ Me	CH₂OMe-	Ms	H
	Et	Мe	COzMe	CH ₂ OMe	Ms	H
	Pr-i	Мe	C0 _z Me	CH _z OMe	Ms	H
	Ме	H	CONMez	CH₂0Me	Ms	H H • H
i	Et	H	CONMez	CH ₂ 0Me	Ms	H
	Pr-i	H	CONMez	CH ₂ OMe	Ms	H
	Me	H	Me	CH₂0Me	NOz	H H H H
	Me	H	Me	CH20Et	NOz	H
	Et	Ĥ	Me	CH ₂ OMe	NO ₂	Ĥ
)	Et	H H	Me	CH ₂ OEt	NO ₂	Ħ
	Et	Ħ	Ме	CHMeOMe	NO ₂	H H
	Pr-i	H	Me	CH ₂ OMe	NO ₂	H
	Pr-i	H	Ме	CH ₂ OEt	NO ₂	ŭ
5	Me ·	H	C1		NO _z	H H H H
,		П U		CH 20Me		11 17
	Me B	H	CI	CH ₂ OEt	NO _z	П 11
	Et	H	CI	CH ₂ OMe	NO ₂	H
	Eŧ	H	C1	CH ₂ OEt	NO ₂	H
)	Et	H	CI	CHMe0Me	NO _z	H
	Pr-i	H	C1	CH _z OMe	NOz	H
	Pr-i	H	Cl	CH ₂ OEt	NOz	H
	Ме	Йe	Me	CH ₂ 0Me	NOz	Н
	Et	∙ Me	Ме	CH _z OMe	NOz	H
5	Et	Мe	Me	CH ₂ OEt	NOz	H
	Pr-i	Мe	Ме	CH₂OMe	NO ₂	H
	Me ·	Мe	. C1	CH ₂ OMe	NOz	Ħ
	Et ·	Me	CI	CH ₂ OMe	NOz	H

	A	В	X	Y	Z	
5	Et	Ме	C1	CH ₂ OE t	NO ₂	H
	Et Pr-i	Me Me	Cl Cl	CHMeOMe CH₂OMe	NO z NO z	H H
10	Me Me	H H	Ме	CH ₂ OMe	C₹₃	H
	Εt	H	Ме Ме	CH₂OE t CH₂OMe	CF ₃ CF ₃	H H H
	Et Et	H H	Ме Ме	CH₂OEt CHMeOMe	CF₃	H
15	Pr-i	H	Мe	CH ₂ OMe	CF 3 CF 3	H H
	P r -i Me	H H	Me Cl	CH ₂ OEt CH ₂ OMe	CF ₃ CF ₃	H
	Me	H	Cl	CH ₂ OE t	CF₃	H H H H
20	Et Et	H H	CI C1	CH₂OMe CH₂OEt	CF ₃ CF ₃	H H
	Εt	H	C1	CHMe0Me	CF₃ -	H
	Pr-i Pr-i	H H	CI Cl	CH₂OMe CH₂OEt	CF ₃	H H
25	Me Et	Me Me	Me Me	CH₂OMe CH₂OMe	CF ₃ CF ₃	H
	Et	Мe	Ме	CH ₂ OEt	CF₃	H H
	Pr-i Me	Ме Ме	Me CI	CH 20Me CH 20Me	CF ₃ CF ₃	H H
30	Et	Мe	- C1	CH₂OMe	CF₃	H
	Et Et	Me Me	CI Cl	CHzOEt CHMeOMe	CF ₃ CF ₃	H H
	Pr-i Me	Me H	CI Me	CH₂OMe CH₂OMe	CF ₃ CN	H
35	Ме	H	Мe	CH ₂ OEt	CN .	H H
	Et Et	H H	Me Me	CH ₂ OMe CH ₂ OEt	CN CN	H H
	Et	H	Me	CHMe0Me	CN	H
40	Pr-i Pr-i	H H	Me Me	CH ₂ OMe CH ₂ OE t	CN CN	H H
	Йe	H	C1	CH₂OMe	CN	H
	Me Et	H H H H	C1 C1	CH2OEt CH2OMe	CN CN	H H H
45	Et Et	H	C1 C1	CH₂OEt CHMe0Me	CN CN	H
	Pr-i ′		Cl	CH₂OMe`	CN	H
	Pr-i	H	C1	CH ₂ OE t	CN	H

	A	В	X	Y	Z	Q
5	Me	Мe	Мe	CH₂0Me	CM	H
	Et	Me	Ме	CH ₂ OMe	C.V.	H
	Et	Жe	Жe	CH ₂ OEt	CN CN	H .
	Pr-i	Ме	Иe	CH₂0Me	CN	H
10	Мe	Ме	C1	CH ₂ OMe	CN	Ħ
•	Et	Ме	ČI	CH ₂ OMe	CN	Ħ
	Et	Мe	ČĪ	CH ₂ OE t	CN	Ħ
	Et	Ме	ČĪ	CHMeOMe	CN	Ħ
	Pr-i	Мe	- C1	CH₂0Me	СИ	Ħ
15	Ме	H	Мe	CH ₂ OMe	0Me	Ħ
	Me	Ĥ	Мe	CH ₂ OE t	0Me	ਸੌ
	Et	H	Мe	CH ₂ OMe	0Me	Ä
	Et	Ħ	Ме	CH ₂ OE t	0Me	Ħ
	Et	H	Иe	CHMeOMe	0Me	Ħ ·
20	Pr-i	H	Ме	CH ₂ OMe	0Me	Ħ
	Pr-i	H	Иe	CH ₂ OE t	0Me	Ħ
	Me	H	CI	CH ₂ OMe	0Me	ннннннннннннн
	Me	H	CI	CH ₂ OEt	OMe .	Ħ
25	Et	H	CI	CH ₂ OMe	0Me	H
	Et	Ħ	CI	CH ₂ OEt	0Me	H
	Et .	H	C1	CHMe0Me	0Me	H
	Pr-i	H	C1	CH₂0Me	0Me	H
	Pr-i	H	. C1	CH ₂ OEt	0Me	H H H
30	Me	Ме	Йe	CH₂OMe	0Me	H
	Et	Мe	Йe	CH ₂ 0Me	0Me	Ħ
	Et	Ме	Иe	CH ₂ OE t	0Me	H
	Pr-i	Мe	Иe	CH₂OMe	0Me	H
35	Мe	Ме	Cl	CH₂OMe	0Me	- H
	Et	Ме	C1	CH₂0Me	0Me	H
	Et	Ме	C1	CH ₂ OE t	0Me	H H H H
	Et	Ме	C1	CHMe0Me	0Me	H
	Pr-i	Иe	Cl	CH₂0Me	0Me	Ħ
40	Me	H	Иe	CH₂0Me	Br	H
	Ме	H	Ме	CH ₂ OEt	Br	H .
	Et Et	H H	Иe	CH₂OMe	Br	H
	Et	<u>H</u>	Me	CH ₂ OE t	Br	H
45	Et .	·H	Ме	CHMeOMe	Br	H
₩	Pr-i	H	Me	CH ₂ OMe	Br D	H TT
	Pr-i	H	Ме	CH ₂ OEt	Br o_	H H H . H . H
	Me ·	H	C1	CH _z OMe	Br .	<u> </u>

	A.	Б	Х	Y	Z	<u>ę.</u>
5	<u> </u>	FT.	CI	CT ACL		
	Me Et	H H	CI CI	CH ₂ OEt	Br	Ħ
	Et	H	Cl	CH ₂ OMe CH ₂ OE t	· Br	H
	Et	H	CI	CHMeOMe	Br Br	п
10	Pr-i	H	CI	CH ₂ OMe	Br	п.
	Pr-i	Ħ	ČÌ	CH ₂ OEt	Br	H
	Мe	Йe	Мe	CH ₂ OMe	Br	H H H H
	Et	Ме	Ме	CH ₂ OMe	Br	Ħ
15	Et	Мe	· Ме	CH ₂ OEt	Br	H
	Pr-i	Ме	Иe	CH₂OMe	Br	H
	Ме	Ме	C1	CH₂OMe	Br	H
	Et	Ме	C1	CH ₂ OMe	Br	Ħ
	Et	Ме	C1	CH ₂ OEt	Br	H
20	Et	Me M-	CI	CHMeOMe	Br	H .
	Pr-i Me	Ме Н	CI Me	CH₂OMe CH₂OMe	. Br I	ii u
	Me	H	ne Me	CH ₂ OEt	Ţ	H H H H H H
	Et	H	Me	CH ₂ OMe	T	H
25	Et	Ħ	Мe	CH ₂ OEt	Ť	H
	Et	Ĥ	Ме	CHMeOMe	Ī	H H H H H
	Pr-i	Ħ	Me	CH ₂ OMe	Ī	H
	Pr-i	H	Ме	CH ₂ OEt	I	H
30	Me	H	C1	CH ₂ OMe	I	H
	Ме	H	CI	CH ₂ OEt	<u>I</u>	H
	Et	H	C1	CH _z OMe	Ţ	H
	Et Et	H	C1	CH ₂ OEt	l T	H H
oe.	Pr-i	H H	Cl Cl	CHMe0Me CH₂0Me	I T	H
35	Pr-i	H	Cl	CH ₂ OEt	Ţ	H
	Me	Ме	Ме	CH ₂ OMe	Ī	Ħ
	Et	Мe	Me	CH₂OMe	Ī	H H
	Et	Me	Me	CH ₂ OE t	Ī	H
40	Pr-i	Ме	Мe	CH ₂ OMe	I	H
	Мe	Мe	C1	CH₂0Me	\cdot I	H
	Et Et	Me	C1	CH ₂ 0Me	Ī	H
	Et	· Me	CI	CH ₂ OEt	. <u>I</u>	H
45	Et .	Me	CI	CHMe0Me	1	. Н
	Pr-i	Ме	CI M_	CH 20Me	sca I	П. П
	Me Me	H H	Me Me	CH₂OMe CH₂OEt	SCF 3 SCF 3	H H H H
	116 .	14	ne	CHZOEL	201, 3	

Et H Me CH ₂ OMe SCF Et H Me CH ₂ OEt SCF Et H Me CHMeOMe SCF Et H Me CHMeOMe SCF 10 Pr-i H Me CH ₂ OMe SCF Me H Cl CH ₂ OMe SCF Me H Cl CH ₂ OMe SCF Et H Cl CH ₂ OMe SCF Et H Cl CH ₂ OMe SCF Et H Cl CH ₂ OMe SCF Fr-i H Cl CH ₂ OMe SCF SCF Et H Cl CH ₂ OMe SCF Et H Cl CH ₂ OMe SCF Et SCF Et H Cl CH ₂ OME SCF Et SCF ET SCF ET SCF	3 H 3 H 3 H 3 H 3 H 4 H 3 H 4 H 4 H
Et H Me CHMeOMe SCF Pr-i H Me CH ₂ OMe SCF Pr-i H Me CH ₂ OEt SCF Me H Cl CH ₂ OEt SCF Et H Cl CH ₂ OE SCF Et H Cl CH ₂ OE SCF Et H Cl CH ₂ OE SCF Et H Cl CH ₂ OE SCF Et H Cl CH ₂ OE SCF Et H Cl CH ₂ OE SCF Et H Cl CH ₂ OE SCF Et Cl CH ₂ OE SCF Et Cl CH ₂ OE SCF Et Cl CH ₂ OE SCF Et Cl CH ₂ OE SCF Et Cl CH ₂ OE SCF ET CL CH ₂ OE SCF ET CL CH ₂ OE SCF ET CL CH ₂ OE SCF	3 H 3 H 3 H 3 H 3 H
Pr-i	3 H 3 H 3 H 3 H 3 H
Pr-i H Me CH ₂ OEt SCF Me H Cl CH ₂ OMe SCF Me H Cl CH ₂ OEt SCF Et H Cl CH ₂ OMe SCF Et H Cl CHMeOMe SCF Et H Cl CHMeOMe SCF Pr-i H Cl CH ₂ OMe SCF Pr-i H Cl CH ₂ OEt SCF	3 H 3 H 3 H 3 H 3 H
Me H C1 CH_2OMe SCF Me H C1 CH_2OEt SCF Et H C1 CH_2OEt SCF Et H C1 CH_2OEt SCF Et H C1 CH_2OEt SCF Et H C1 CH_2OEt SCF Et H C1 CH_2OHe SCF Pr-i H C1 CH_2OHe SCF Pr-i H C1 CH_2OEt SCF	3 H 3 H 3 H 3 H 3 H
Me H C1 CH_2OEt SCF Et H C1 CH_2OEt SCF Et H C1 CH_2OEt SCF Et H C1 CH_2OEt SCF Et H C1 $CHMeOMe$ SCF Pr-i H C1 CH_2OEt SCF Pr-i H C1 CH_2OEt SCF	2 H 3 H 3 H
Et H C1 CH_2OMe SCF Et H C1 CH_2OEt SCF Et H C1 $CHMeOMe$ SCF Pr-i H C1 CH_2OEt SCF Pr-i H C1 CH_2OMe SCF Pr-i H C1 CH_2OEt SCF	2 H 3 H 3 H
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3 H 3 H 3 H
Et H C1 CHMeOMe SCF Pr-i H C1 CH $_2$ OMe SCF Pr-i H C1 CH $_2$ OEt SCF	3 H 3 H
Pr-i H C1 CH ₂ 0Et SCF	3 H 3 H
	3 H
M. W. W. CT AV.	77
Me Me CH ₂ OMe SCF	3 H
et ne ne Chaone Sch	3 H
Et Me Me CH2OEt SCF	3 H
Pr-i Me Me CH ₂ OMe SCF Me Me C1 CH ₂ OMe SCF	z H
G+ M- C1 CH OM- CCE	3 H
Et Me C1 CH ₂ OFE SCF	
Et Me C1 CHMeOMe SCF	. H
Pr-i Me C1 CH ₂ OMe SCF	3 H 3 H CF ₃ H
Me H Me CH ₂ OMe SO ₂	ÎF. Î
30 Me H Me CH ₂ OEt SO ₂ (CF ₃ H
Et H Me CH ₂ OMe SO ₂	
Et H Me CH ₂ OEt SO ₂	CF₃ H
Et H Me CHMeOMe SOzi	CF ₃ H
Pr-i H Me CH ₂ OMe SO ₂	CF ₃ H
FF-I n me Chault Suzi	CF ₃ H
Me H C1 CH ₂ OMe SO ₂	
Me H Cl CH_2OEt SO_2OE Et H Cl CH_2OMe SO_2OE	
F+ U C1 CU 1G+ S0-1	
Et H C1 CHMeOMe SO ₂	
Pr-i H C1 CH ₂ OMe SO ₂	
Pr-i H Cl CH ₂ OEt SO ₂ :	
Me Me Me CH ₂ OMe SO ₂	CF ₃ H
45 Et Me Me CH ₂ OMe SO ₂	CF ₃ H
Et Me Me CH ₂ OEt SO ₂	CF ₃ H
Pr-i Me Me CH ₂ OMe SO ₂	CF ₃ H
Me C1 CH ₂ OMe SO ₂	CF ₃ H

0 282 944

A	В	Х	Y	Z	Q.
Et Et Et Pr-i	Me Me Me Me	CI CI CI	CH ₂ OMe CH ₂ OEt CHMeOMe CH ₂ OMe	S0 ₂ CF ₃ S0 ₂ CF ₃ S0 ₂ CF ₃ S0 ₂ CF ₃	H H H

	A	В	Х	Y	. Z	Q
5	Me	Н	Ме	C00Me	Ms	Na .
	Ме	H	Ме	COOMe	Ms	K
	Me	H	Мe	C00Me	2K	Ca1/2
	Ме	H	Ме	C00Me	Ms	Mg1/2
10	Мe	H	Ме	C00Me	Ms	Etn H3
	Мe	H	Ме	C00Me	Ms	i-PrN- H3
	Мe	H	Me	C00Me	Ms	EtziN+ Hz
	Ме	H	Ме	C00Me	Ms	MegN° CH2CH2OH
15	Et	H	Жe	COOMe	Ms N-	На К
,, ,	Et	H	Ме	COOMe	Ms Ms	n Ca _{1/2}
	Et	H	Ме	COOMe COOMe	ns Ns	Mg1/2
	Et	H H	Me Me	COOMe	iis Ms	Etn H3
	Et Et	n H	rie Me	COOME COOME	Ms	i-PrN+ Ha
20	Et	H	Me	COOMe	Ms	Et ₂ N+ H ₂
	Et	H	Ме	COOMe	Ms	MeaN+ CH2CH2OH
	i-Pr	H	Йe	C00Me	Иs	Na
	i-Pr	Ħ	Ме	C00Me	Иs	K
25	i-Pr	H	Йe	C00Me	Ms .	Ca _{1/2}
	i-Pr	H	Иe	C00Me	Ms	Mg1/2
	i-Pr	Ħ	Мe	C00Me	Ms	EtN+ H ₃
•	i-Pr	H	Ме	C00Me	ĭIs	i-PrN+ H ₃
	i-Pr	H -	Йe	COOMe	Ms	EtzN+ Hz
30	i-Pr	H	Ме	COOMe	Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
	Йe	Ме	Me	COOMe	Ms Ma	i-PrN⁺ H₃ Na
	Et	Ме	Ме	COOMe COOMe	Ms Ms	i-PrN* H ₃
	Et i-P r	Me Me	Me Me	COOMe	Ms	i-PrN+ Hs
35	Me	rie H	Cl	COOMe	Ms	Na
	, We	H	Cl	COOMe	Ms	K
	-Me	Ħ	Čĺ	COOMe	Ms	Ca _{1/2}
	Me	Ä	CI	C00Me	Иs	Mg _{1/2}
40	Me	H	C1	COOMe	Ms	EtN+ H ₃
	Ме	H	C1	C00Me	Ms	i-PrN+ H ₃
	Ме	H	C1	COOMe	Ms	EtzN* Hz
	Мe	H	C1	COOMe	Ms	Me ₃ N [*] CH ₂ CH ₂ OH
	Et	. Н	C1	COOMe	Жs	Na V
45	Et	H	C1	COOMe	Ms	K Ca
	Et ´	H	C1	COOMe	Ms Ms	Ca _{l/z} Mg _{l/z}
	Et	H	C1	COOMe	Ms	1161/2

				·		
_	A	В	X	Y	Z	Ç.
5	C÷	п	C1	COOMe	Ms	EtN+ H3
	Et E÷	H		C00Me	ns Ms	
	Et	H	CI	COOMe	ក្នុង ខេត្ត	
	Εt	H .	Cl		ns Ms	
10	Et i-Pr	H	C1	COOMe	ns Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
		H	C1	COOMe		Na V
	i-Pr	H	CI	COOMe	Ms	K
	i-Pr	H	C1	COOMe) No.	Ca _{1/2}
	i-Pr	H	CI	COOMe	Ms Ma	Mg _{1/2}
15	i-Pr	H	C1	COOMe	ař Z	EtN+ Ho
	i-Pr	H	CI	COOMe	Ms	i-PrN+ Ha
	i-Pr	H	C1	C00Me	ağ.	Et ₂ N ⁺ H ₂
	i-Pr	H	C1	C00Me	Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
	Me	Ме	C1	COOMe	Мs	i-PrN+ H ₃
20	Et	Me	C1	C00Me	Ms	Na · D V+ N
	Et	Ме	CI	C00Me	žš.	i-PrN+ H ₃
	i-Pr	Ме	C1	C00Me	Яs	i-PrN+ H ₃
	Мe	H	0Me	C00Me	Ms	Na
25	Мe	H	0Me	C00Me	Ms	K
20	Мe	H	0Me	C00Me	Ms	Ca _{1/2}
	Ме	Ħ	0Me	C00Me	Ms	Mg1/2
	Мe	H	0Me	COOMe	Ms	EtN+ H3
	Ме	H	0Me	C00Me	Ms	i-PrN+ H ₃
30	Ме	H -	0Me	C00Me	Ms	EtzN+ Hz
	Иe	H	0Me	C00Me	Ms	Me ₃ N + CH ₂ CH ₂ OH
	Et	H	- 0Me	C00Me	Ms	Na
	Εt	H	0Me	C00Me	Ms	K
	Et	H	0Me	COOMe	Ms	Ca 1/2
35	Et	H	0Me	C00Me	Ms	Mg 1/2
	Et	H	0Me	C00Me	Ms	EtN+ H3
	Et	H	0Me	C00Me	Ms	i-PrN+ Ha
	Et	H	0Me	C00Me	Ms	EtzN+ Hz
	Et	H	0Me	C00Me	zK	MeaN + CH2CH2OH
40	i-Pr	H	0Me	C00Me	Иs	Na
	i-Pr	H	0Me	C00Me	Ms	K
	i-Pr	H	0Me	C00Me	Ms	Ca1/2
	i-Pr	. Н	0Me	COOMe :	гMs	Mg:/2
45	i-Pr	H	0Me	C00Me	Ms	EtN+ H3
	i-Pr	·H	0Me	COOMe.	Мs	i-PrN+ H3
	i-Pr	H	0Me	COOMe	Ms	EtzN+ Hz
	i-Pr	Ĥ	0Me	C00Me	Ms	MeaN+ CHzCHzOH

_	A	E	X	Y	Z	Q.
5	Et	Йe	0Me	C00He	Ms	i-PrN+ Ha
	Ме	H	Me	COOEt	Ms	Na Na
	Ме	H	Me	COOEt	Ms	K
	Ме	H	Me	COOEt	Ms	
10	Ме	H	Ме	COOE	Ms	Ca _{1/2}
	Ме	H	ne Me	COOEt	Ms	Mg _{1/2} EtN- H ₂
	Ме	H		COOE t		
	ме Ме	H	Me	COOEt	Ms M-	i-PrN+ H ₃
		11 17	Me		Ms M-	EtzN+ Hz
15	Ме	H H H	Ме	COOE t	Ms	MeaN CHzCHzOH
	Et	n T	Ме	COOE t	Ms	Na
	Et	n n	Ме	COOE t	Яs	K
	Et	H	Ме	COOEt	Ms	Ca:/2
20	Et	H	Ме	COOE t	Ms	Mg _{1/2}
	Et	H	Ме	COOE t	Ms	EtN+ H ₃
	Et	H	Ме	COOE t	Ms	i-PrN+ Ha
	Et	H	Ме	COOE t	Ms	EtzN+ Hz
	Et	H	Мe	COOE t	Ms	Me3N+ CH2CH2OH
25	i-P r	Ħ	Me	COOE t	Ms	Na
	i-Pr	H	Ме	COOE t	Жs	K
	i-Pr	H	Me	COOE t	Ms	Ca _{1/2}
	i-Pr	H	Ме	COOE t	Мs	Mg1/2
	i-Pr	H	Иe	COOE t	Ms	EtN+ H ₃
30	i-P r	· H	Ме	COOE t	Ms	i-PrN+ H3
	i-Pr	H	. Me	COOE t	Ms	EtzN+ Hz
	i-Pr	H	Me	COOE t	Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
	Ме	Me	Иe	COOEt	Ms	i-PrN+ Hs
35	Et	Ме	Ме	COOE t	Ms M=	Na : n_u+ n
-	Et i-Pr	Me	Me V-	COOEt	Ms M-	i-PrN+ Ha
		Ме	Me	COOEt COOEt	Ms Ma	i-PrN+ H ₃ Na
	´Me ⁻Me	H	C1		Ms Ma	K
	ne Me	H	Cl Cl	COOEt COOEt	Ms Ms	. $Ca_{1/2}$
40		H H	CI C7	COOE t		
	Me Me	n H	Cl Cl	COOEt	Ms Ms	Mg _{1/2} EtN ⁺ H ₃
	Ме		C1	COOE t		
	ne Me	H H	Cl Cl	COOEt	Ms Ms	i-PrN+ H ₃ Et _z N+ H _z
45	Me	. 11	CI	COOEt		
45	Et	H	C1 C1	COOEt	Ms Ms	Me ₃ N+ CH ₂ CH ₂ OH Na
	Et '	H H	C1	COOEt	ns Ms	na K
	Et	H	C1	COOEt	ns Ms	л Сэ
		. 11	01	00061	112	Ca _{1/2}

0 282 944

5	A	В	X	<u>Y</u>	Z	Q
J	Et	Ħ	CI	C00Et	Ms	Mg1/2
	Et	H	C1	COOE t	Ms	EtN ⁺ H ₃
	Et	H	Cl	COOE t	XIS	i-PrN- Ha
	Εt	H	CI	COOEt	Ms	EtzN+ Hz
10	Et	H	C1	COOEt	Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
	i-P r	H	C1	COOE t	iis As	Na Na
	i-Pr	H	C1	COOEt	ns 2K	K
	i-P r	Ħ,	CI	COOEt	Ms	Ca _{1/2}
	i-Pr	H	C1	COOEt	Ms	Mgi/c
15	i-Pr	H	C1	COOEt .	Ms	EtN H3
	i-Pr	H	Cl	COOEt	ns Ns	i-PrN+ H3
	i-Pr	H	C1	COOEt	Ms	Et ₂ N+ H ₂
	i-Pr	H	Cl	COOEt	Ms	Me ₃ N + CH ₂ CH ₂ OH
20	Me	Ме	CI	COOEt	Ms	i-PrN+ H3
	Et	Ме	C1	COOEt	Ms	Na
	Et	Me	C1	COOEt	Ms	i-PrN+ Ha
	i-P r	Me	CI	COOEt	Ms	i-PrN+ H3
	Me	H	0Me	COOEt	Ms	Na
25	Иe	H	0Me	COOEt	Ms	K
	Ме	Ħ	0Me	COOEt	Ms	Ca _{1/2}
	Йe	H	0Me	COOEt	Ms.	Mg1/2
	Ме	Ħ	0Me	COOEt	Ms	EtN H ₃
	Иe	Ĥ	0Me	COOEt	Ms	i-PrN+ H ₃
30	Ме	H	0Me	COOEt	zK	EtzN+ Hz
	Ме	Ĥ	0Me	COOEt	en en	Me3N+ CH2CH2OH
	Et	H	0Me	COOEt	Ms	Na
	Et	Ħ	0Me	COOEt	Ms	K
35	Et	Ħ	0Me	COOEt	Ms	Cai/z
	Et	H	0Me	COOEt	Ms	Mg1/2
	£t	Ħ	0Me	COOEt.	Ms	EtN+ H3
	- Et	H	0Me	COOEt	Ms	i-PrN+ H3
	Et	Ħ	0Me	COOEt	Ms	EtzN+ Hz
40	Et	Ĥ	0Me	COOEt	Ms	MeaN+ CH2CH2OH
	i-Pr	Ħ	0Me	COOEt	Ms	Ха
	i-Pr	Ĥ	0Me	COOEt	Ms	K
	i-Pr	. Н	0Me	COOEt	Ms	Ca _{1/2}
45	i-Pr	H	0Me	COOE t	Ms	Mg1/2
40	i-Pr	Ħ	0Me	COOEt	Ms	EtN+ H ₃
	i-Pr	H	0Me	COOE t	Ms	i-PrN+ H3
	i-Pr	H	0Me	COOEt	Ms	EtzN+ Hz
				-		

	V CH2CH2OH
	1 113
Me H Me COOPr-i Ms Na	:
Me H Me COOPr-i Ms K	
	31/2
Me H Me COOPT-I Ms M	31/2
	Î Î Î 3
Me H Me COOPr-i Ms i-Pri	
Me H Me COOP=-i Ms Fts:	I Hz
	V- CH2CH2OH
Et H Me COOPT-i Ms Na	
Et H Me COOPT-i Ms K	
Et H Me COOPr-i Ms Ca	1/2
20 Et H Me COOPr-i Ms M	31/2
	(† H₃
Et H Me COOPr-i Ms i-Pri	
	I+ Hz
	4 CH2CH2OH
25 i-Pr H Me COOPr-i Ms Na	3
i-Pr H Me COOPr-i Ms K	
i-Pr H Me COOPr-i Ms C	1/2
i-Pr H Me COOPr-i Ms M	31/2
	V+ H3
i-Pr H Me COOPr-i Ms i-Pr	
i-Pr H Me COOPr-i Ms Etzl	
	N° CH2CH2OH N° H3
35 Et Me Me COOPr-i Ms N Et Me Me COOPr-i Ms i-Pr	а Ч+ Н _з
it he he coort-i hs i-vr	
-Me H C1 C00Pr-i Ms N	
Me H C1 COOPr-i Ms K	_
	31/Z
Me H C1 COOPT-I Ms M	g1/2
	N+ H₃
	N+ H3
Me H Cl COOPT-I Ms Etc	N+ Hz
	N° CH2CH2OH
Et' H Cl COOPr-i Ms N	_
Et H Cl COOPr-i Ms K	

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_	A	В	X	Y	Z	Q
5	Εŧ	H	CI	COOPT-i	Ms	Ca1/2
	Et	Ħ	CI -	COOPr-i	Ms	Mg1/2
	Et	H	CI	COOPr-i	Иs	EtN- H3
10	Et	H	CI	COOPr-i	Яs	i-PrN+ Ha
	Et Et	H H	Cl Cl	COOPr-i COOPr-i	ak As	Et ₂ N+ H ₂ Me ₃ N+ CH ₂ CH ₂ OH
	i-Pr	H	Cl	COOPT-I	ns Ms	Na Na
	i-Pr	H	C1	COOPT-i	Ms	K
15	i-Pr	Ĥ	CI	COOPT-i	ă\s	 Ca _{1/2}
75	i-Pr	Н	CI	COOPr-i	Мs	Mg₁/2
	i-Pr	H	C1	COOPr-i	Ms	EtN+ H3
	i-Pr	Ĥ	C1	COOPr-i	Ms	i-PrN+ H ₃
	i-Pr	H	CI CI	COOPr-i COOPr-i	Ms Ms	Et ₂ N ⁺ H ₂
20	i-Pr Me	H Me	C1 C1	COOPF-I	ns Ms	MesN+ CH2CH2OH i-PrN+ H3
	Et	Ме	CI CI	COOPr-i	Ms	Na Na
	Et	Me	CI	COOPr-i	Ms	i-PrN+ H ₃
	i-Pr	Ме	C1	COOPr-i	Ms	i-PrN+ Ha
25	Ме	. <u>H</u>	0Me	COOPr-i	Ms	Na
	Me M-	H	0Me	COOPr-i	Ms M-	K
	Me Me	H H	0Me 0Me	COOPr-i COOPr-i	Ms Ms	Ca _{1/2} Mg _{1/2}
	ile	H ·	One OMe	COOPr-i	Ms	EtN+ H ₃
30	Ме	Ή	0Me	COOPr-i	Ms	i-PrN+ H3
	Йe	- Н	0Me	COOPr-i	Ms	EtzN+ Hz
	Ме	H	0Me	COOPr-i	Ms	Me3N+ CH2CH2OH
	Et	H	0Me	COOPr-i	Ms.	Na K
35	Et Et	H H	OMe OMe	COOPr-i COOPr-i	Ms Ms	Δ Ca₁∕z
	Et	· H	OMe	COOPr-i	Ms	Mg1/2
	-Et	H	OMe	COOPr-i	Ms	EtN+ H ₃
	Et	H	0Me	COOPr-i	Ms	i-PrN+ Ha
40	Et	H	0Me	COOPr-i	Ms	Et ₂ N+ H ₂
	Et	Ħ	0Me	COOPr-i	Ms	MesN+ CH2CH2OH
	i-Pr i-Pr	H H	0Me 0Me	COOPr-i COOPr-i	Ms Ms	Na K
	i-Pr	n H	one OMe	COOPT-I	ns Ms	Ca _{1/2}
45	i-Pr	· H	0Me	COOPT-i	Ms	Mg1/2
	i-Pr´	H	0Me	COOPr-i	Ms	EtN+ H3
	i-Pr	- H	0Me	COOPr-i	Ms	i-PrN+ H ₃

5	A	В	X	Y	Z	Q
J	i-Pr	H	ОМе	COOPr-i	Ms	EtzN+ Hz
	i-2r	H	0Me	COOPr-i	Ms	MeaN CH2CH2OH
	Εt	Ме	0Me	COOPr-i	Ms	i-PrN+ Ha
10	Me	H	Мe	COOCH ₂ CH ₂ OMe	Ms	Na
70	Мe	H	Иe	COOCH ₂ CH ₂ OMe	Ms	K
	Мe	H	Me	COOCH ₂ CH ₂ OMe	Ms	Cai/z
	Мe	H	Мe	COOCH ₂ CH ₂ OMe	Ms	Mg:/2
	Мe	H	Жe	COOCH ₂ CH ₂ OMe	Ms	EtN Ha
15	Мe	Ħ	Мe	COOCH2CH2OMe	Мs	i-PrN+ H3
	Мe	H	Мe	COOCH ₂ CH ₂ OMe	Ms	EtzN+ Hz
	Ме	H	Мe	COOCH2CH2OMe	Ms	MeaN+ CH2CH2OH
	Et	H	Мe	COOCH z CH z OMe	Ms	Na
	Εt	H	Мe	COOCH ₂ CH ₂ OMe	Ms	K
20	Et Et	Ħ	Me	COOCH2CH2OMe	Ms	Ca _{1/2}
	Et	H H	Мe	COOCH 2CH 2OMe	Ms	Mg1/2
	Et Et Et	H	Me	COOCH ₂ CH ₂ OMe	Ms	EtN+ Ha
	Et	Ĥ	Me	COOCH 2CH 2OMe	Ms	i-PrN+ Ha
25	Έt	H	Me	COOCH ₂ CH ₂ OMe	Ms	EtaN+ Hz
25	Et	H	Me	COOCH z CH z OMe	Ms	MeaN+ CH2CH2OH
	i-Pr	H	Мe	COOCH z CH z OMe	Ms	· Na
	i-Pr	H	Me	COOCH ₂ CH ₂ OMe	Ms	К
	i-Pr	H	Me	COOCH ₂ CH ₂ OMe	Ms	Cai/z
30	i-Pr	H ·	Me	COOCH _z CH _z OMe	Ms	Mg1/2
	i-Pr	H	Мe	COOCH 2CH 20Me	Ms	EtN+ H3
	i-Pr	H	Me	COOCH ₂ CH ₂ OMe	Ms	i-PrN+ Ha
	i-Pr	H	Мe	COOCH _z CH _z OMe	Ms	EtzN+ Hz
	i-Pr	H	Мe	COOCH zCH zOMe	Ms	MeaN+ CH2CH2OH
35	Мe	Ме	Мe	COOCH 2CH 2OMe	Ms	i-PrN+ Ha
	Et	Ме	Мe	COOCH ₂ CH ₂ OMe	Ms	Na
	Et	Ме	Мe	COOCH ₂ CH ₂ OMe	Ms	i-P r N+ H ₃
	i-Pr	Ме	Me	COOCH ₂ CH ₂ OMe	Ms	i-PrN+ Ha
40	Йe	H	Cl	COOCH ₂ CH ₂ OMe	Ms	Na
	Мe	H	C1	COOCH 2CH 20Me	Ms	K
	Мe	H	C1	COOCH ₂ CH ₂ OMe	Ms	Cai/z
	Мe	H	CI	COOCH zCH zOMe	Ms	Mg _{1/2}
	Me	. Н	CI	COOCH z CH z OMe	Ms	EtN+ H3
45	Мe	Н	Cl	COOCH2CH2OMe	Ms	i-PrN+ Ha
	Me ,	H	Cl	COOCH ₂ CH ₂ OMe	Ms	EtzN+ Hz
	Мe	H	CI	COOCH z CH 2 OMe	Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
	Et	H	Cl	COOCH z CH z OMe	Ms	Na Na

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5	- A	В	X	Y	Z	Q
	Et	Н	C1	eMCsH2CH2OMe	Ms	K
	Et	H H -	CI	COOCH ₂ CH ₂ OMe	Ms	Ca _{1/2}
	Εt	H	Cl	COOCH ₂ CH ₂ OMe	žK	Mg1/2
10	Et	H	C1	COOCH ₂ CH ₂ OMe	Ms	Etn H ₃
10	Εt	. Н	CI	COOCH2CH2OMe	ils.	i-PrN+ Ha
	Et	Н	CI	COOCH ₂ CH ₂ OMe	Ms	EtzN+ Hz
	Et	H	Cl	COOCH2CH2OMe	Ms	Me ₃ N+ CH ₂ CH ₂ OH
	i-P=	H	C1	COOCH ₂ CH ₂ OMe	Мs	Na Na
15	i-Pr	Н	C1	COOCH2CH2OMe	Ms	K
	i-Pr	H	C1	COOCH ₂ CH ₂ OMe	Ms	Ca _{1/2}
	i-Pr	H	C1	COOCH2CH2OMe	Ms	Mg1/2
	i-Pr	H	Cl	COOCH2CH2OMe	Ms	EtN+ H ₃
	i-Pr	H	C1	COOCH ₂ CH ₂ OMe	Ms	i-PrN+ H ₃
20	i-Pr	H	Cl	COOCH2CH2OMe	Ms	EtzN+ Hz
	i-Pr	H	C1	COOCH _z CH _z OMe	Ms	Me3N+ CH2CH2OH
	Мe	Мe	CI	COOCH _z CH _z OMe	Ms	i-P r N+ H ₃
	Et	Ме	Cl	COOCH _z CH _z OMe	Ms	Na
25	Et	Иe	CI	COOCH ₂ CH ₂ OMe	Ms	i-PrN+ Ha
	i-Pr	Мe	CI	COOCH ₂ CH ₂ OMe	Ms	i-PrN+ H3
	Мe	H	0Me	COOCH ₂ CH ₂ OMe	Ms	Na
	Ме	$^{+}$ $ m H$	0Me	COOCH _z CH _z OMe	Ms	. <u>K</u>
	Ме	H H	0Me	$COOCH_zCH_zOMe$	Ms	Ca1/2
30	Ме	H .	0Me	COOCH ₂ CH ₂ OMe	Ms	Mg1/2
	Иe	H	0Me	COOCH _z CH _z OMe	Ms	EtN+ H3
	Me	H	0Me	COOCH ₂ CH ₂ OMe	Ms	i-PrN+ H3
	Ме	H	0Me	COOCH ₂ CH ₂ OMe	Ms	EtzN+ Hz
20	Йe	<u>H</u>	0Me	COOCH2CH2OMe	Мs	MesN+ CH2CH2OH
35	Et	H	0Me	COOCH2CH2OMe	Мs	Na
	Et	H	0Me	COOCH ₂ CH ₂ OMe	zĸ	K
	Et :	H	0Me	COOCH ₂ CH ₂ OMe	ak	Ca _{1/2}
	ما شا	H	0Me	COOCH ₂ CH ₂ OMe	Ms	Mg _{1/2}
40	Et	H	0Me	COOCH ₂ CH ₂ OMe	Ms	EtN+ H ₃
	Et Et	H	0Me	COOCH ₂ CH ₂ OMe	Ms	i-PrN+ Ha
		H	0Me	COOCH ₂ CH ₂ OMe	Ms	EtzN+ Hz
	Et : 0-	H	0Me	COOCH ₂ CH ₂ OMe	Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
	i-Pr	H	0Me	COOCH zCH zOMe	Ms	<u>N</u> a
45	i-Pr	H :	0Me	COOCH ₂ CH ₂ OMe	Ms	K
	i-Pr, i-Pr	H	OMe	COOCH ₂ CH ₂ OMe	Ms	Ca _{1/2}
	i-Pr	H H	OMe	COOCH ₂ CH ₂ OMe	Ms	Mg _{1/2}
	1-11	Ω	0Me	COOCH ₂ CH ₂ OMe	Ms	EtN+ H ₃

. 5	A	Б	X	Y	Z	Q
J	i-Pr	Н	0Me	COOCH 2CH 20Me	Ms	i-PrN- Ha
	i-Pr	H	0Me	COOCHzCHzOMe	Ms	EtzN+ Hz
	i-P r	Н	0Me	SMO_2HO_2HOOO	Мs	MesN~ CH2CH2OH
10	Εt	Ме	0Me	$9MG_{5}H_{5}H_{2}OOO$	Ms	i-PrN⁺ H₃
	Ме	H	Ме	CH₂OMe	Ms	Na
	Me	H	Ме	CH ₂ OMe	Ms.	K
	Ме	Н	Ме	CH₂OMe	Ms	Ca _{1/2}
	Me	H H	Ме	CH _z OMe	Ms	Mg:/2
15	Me	Н	Мe	CH ₂ OMe	Ms	EtN- Ha
	Ме	Н	Мe	CH _z OMe	Ms	i-PrN- Ha
	Мe	H	Мe	CH ₂ OMe	Ms	EtzN+ Hz
	Йe	H	Ме	$CH_{2}OMe$	Ms	MeaN CH2CH2OH
	Et	H	Мe	CH ₂ OMe	Ms	Na
20	Et	Ħ	Мe	CH₂OMe	Ms	K
	Et	. H	Ме	CH_zOMe	Ms	Ca _{1/2}
	Et	H H H H H H H H H H H H H H H H H H H	Ме	CH₂0Me	Ms	Mg:/2
	Et	H	Ме	CH ₂ OMe	Ms	EtN+ Ha
25	Et	H	Мe	$CH_{z}OMe$	Ms	i-PrN+ Hs
	Et	H	Me	CH20Me	Ms	EtzN+ Hz
	Εt	H	Мe	CH ₂ OMe	Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
	i-Pr	H	Хe	CH₂0Me	Ms	Na
	i-Pr	H	Иe	CH ₂ OMe	Ms	K
30	i-Pr	H H H	Me	CH ₂ OMe	Ms	Ca _{t/2}
	i-Pr	H	Мe	CH ₂ OMe	Ns ·	Mg1/2
	i-Pr	H H	Me	CH₂OMe	Ms	EtN+ H ₃
	i-P r	H	Ме	CH ₂ OMe	Ms	i-PrN ⁺ H ₃
35	i-Pr	Ħ	Ме	CH ₂ OMe	χis	EtzN+ Hz
33	i-Pr	H	Йe	CH ₂ OMe	Ms	MegN+ CHzCHzOH
	Me	Ŋе	Ме	CH ₂ OMe	Ms	i-PrN+ H _s Na
	Et	Me	Me	CH ₂ OMe	Ms V-	i-PrN- H ₃
	Et	Me	Me M-	CH ₂ OMe	Ms Ma	i-PrN+ H ₃
40	i-Pr	Ме	Иe	CH ₂ OMe	Ms Ma	Na Na
	Me Ma	H	C1	CH _z OMe	Ms Ms	K
	Me	H	C1	CH ₂ OMe	iis Is	
	Me	H	C1	CHzOMe CHzOMe	ns Ms	Ca1/2 Mg1/2
46	Me Me	H	CI Cl	CH ₂ OMe	Ms	Etn+ H ₃
45	ne Me -	· Н Н	CI	CH ₂ OMe	Ms	i-PrN+ H ₃
	Me	n H	Cl	CH ₂ OMe	Ms	EtzN+ Hz
	Me	H H	CI	CH ₂ OMe	Ms	MeaN+ CH2CH2OH
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5	A	В	Х	Y	Z	Q.
	Et	H	Cl	CH₂0Me	Мs	Na
	Εt	Ħ	Ci	CH ₂ OMe	Ms	K
	Et	H	ČÌ	CH ₂ OMe	er. SK	Ca _{1/2}
	Et	Ĥ	ČĪ	CH ₂ OMe	Ms	Mg1/2
10	Et	H	ČĪ	CH₂OMe	Ms	EtN+ Ha
	Et	H	ČĪ	CH ₂ OMe	ZK ZK	i-PrN+ H ₃
	Et	H	CI	CH ₂ OMe	Ms	EtzN+ Hz
	Εt	H	CI	CH ₂ OMe	Ms	MeaN - CH2CH2OH
15	i-Pr	H	CI	CH ₂ OMe	Ms	Na Na
	i-Pr	Ħ	C1	CH _z OMe	Ms	K
	i-Pr	H	CI	CH ₂ OMe	Ms	Ca _{l/2}
	i-Pr	H	CI	CH₂0Me	Ms	Mg1/2
	i-Pr	H	G1	CH ₂ OMe	Ms	EtN+ Ha
20	i-P⊤	H	Cl	CH₂0Me	Ms	i-PrN+ H3
	iPr	. Н	C1	CH ₂ OMe	.Ms	EtzN+ Hz
	i-Pr	H	CI	CH₂0Me	Ms	MeaN CH2CH2OH
	Me	Иe	C1	CH₂OMe	Ms	i-PrN+ H ₃
25	Et	Me	C1	CH₂OMe	Ms	Na
23	Et	Ме	C1	CH₂0Me	Ms	i-PrN+ H₃
	i-Pr	Me ·	CI	CH=OMe	Ms	i-PrN+ H ₃
	Мe	H	0Me	CH ₂ OMe	Ms	Na
	Me	H .	0Me	CH ₂ OMe	Ms	K
30	Ме	H	0Me	CH ₂ OMe	. Ms	Ca _{1/2}
	. Me	H	0Me	CH ₂ OMe	Ms	Mg1/2
	Ме	H	0Me	CH₂OMe	Ms	EtN+ H ₃
	Me Me	H H	OMe	CH₂OMe	Ms	i-PrN+ H ₃
35	Ме	H	0Ме 0Ме	CH₂OMe CH₂OMe	Ms M-	EtzN+ Hz
	Et	H	one 0Me	CH ₂ OMe	Ms Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH Na
	Et	Ĥ	0Me	CH ₂ OMe	ns Ms	K
	Et	H	0Me	CH ₂ OMe	en em	Ca _{1/2}
	Et	H	0Me	CH ₂ OMe	Ms	Mg1/2
40	Ēt	Ë	0Me	CH ₂ OMe	Ms	Etn' H ₃
	Et	H	0Me	CH ₂ OMe	Ms	i-PrN+ H ₃
	Et	Ĥ	0Me	CH ₂ OMe	Ms	EtzN+ Hz
	Ēt	. H	0Me	CH₂OMe	Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
45	i-Pr	Ĭ ·	0Me	CH ₂ OMe	Ms 2M	Na
	i-Pr	H	0Me	CH₂OMe	Ms	K
	i-Pr	H	0Me	CH₂OMe	Ms	Ca _{1/2}
	i-Pr	H	0Me	CH ₂ OMe	Ms	Mg _{1/z}

5	A	В	X	Y	Z	Q.
	i-Pr	H	0Me	CH₂0Me	Ms	EtN+ H3
	i-Pr	H	0Me	CH₂OMe	Ms	i-P r N+ Ha
	i-Pr	H H H	0Me	$CH_{2}OMe$	aK.	EszN+ H2
10	i-Pr		0Me	CH₂OMe	Ms	MeaN - CH2CH2OH
. •	Et	Ме	0Me	CH₂0Me	Ms	i-PrN Ha
	Me	H	Мe	CH _z OE t	2M	Na
	Ме	H	Ме	CH ₂ OE t	Ms	K
	Мe	H	Мe	CH _z OE t	Ms	Ca _{1/2}
15	Ме	H	Мe	CH ₂ OE t	Ms	Mg1/2
	Me	H	Мe	CH₂OE t	Ms	EtN ⁻ H ₃
	Ме	H	Мe	CH ₂ OE t	Ms	i-PrN+ Ha
	Ме	H	Мe	CH ₂ OE t	Ms	EtzN+ H2
	Ме	H	Ме	CH ₂ OE t	Мs	Me ₃ N ⁺ CH ₂ CH ₂ OH
20	Et	H	Ме	CH _z OE t	Ms	Na
	Et	Н	Ме	CH ₂ OE t	Ms	K
	Et	ниннинниннин	Мe	CH _z OE t	2Ms	Ca1/2
	Et	H	Ме	CH ₂ OEt	Ms	Mg1/2
25	Et	H	Мe	CH ₂ OE t	Ms	EtN+ Ha
	Et	H	Me	CH ₂ OE t	Ms	i-PrN+ Ha
	Et	H	Ме	CH ₂ OE t	Ms	EtzN- Hz
	Et	H	Me	CH _z OEt	Ms	MeaN CH2CH2OH
	i-Pr	H H	Ме	CH20Et	Ms	Na
30	i-Pr	H H	Ме	CH ₂ OEt	Ms	K
	i-Pr	Ħ	Ме	CH ₂ OE t	Мs	Cai/z
	i-Pr	H	Ме	CH ₂ OEt	Ms	Mg1/2
	i-Pr	H	Йe	CH ₂ OE t	Яs	EtN- H ₃
35	i-Pr	H H	Ме	CH ₂ OEt	ĭa ĭa	i-PrN ⁺ H ₃
	i-P r i-P r	П TT	Ме	CH ₂ OE t	Ms H-	EtzN+ Hz MezN+ CHzCHzOH
	We i-tr	H	Me	CH ₂ OE t CH ₂ OE t	ek ZK	i-PrN Ha
	-Et	Ме Ме	Me Me	CH ₂ OE t	Ms	Na
	Et	rie Me	ne Me	CH ₂ OEt	ns Ms	i-PrN+ Ha
40	i-Pr	ne Me	ne Me	CH ₂ OE t	Ms	i-PrN+ H ₃
	Me	H	CI	CH ₂ OE t	ns Ms	Na Na
	Ме	H	CI -	CH ₂ OE t	en ZM	K
	Me	H	C1	CH ₂ OE t	Ms	Ca _{1/2}
45	Ме	. Н	C1	CH ₂ OE t	zn Zn	Mg1/2
~~	Me ·	H	Cl	CH ₂ OEt	Ms	EtN+ H3
	Me	H	C1	CH ₂ OE t	Ms	i-PrN+ Ha
	Иe	H	CI	CH ₂ OEt	Ms	EtzN+ Hz
		••	~ · · · · · · · · · · · · · · · · · · ·		• • • • • • • • • • • • • • • • • • • •	

5	A	В	X	Y	Z	Ę.
	Me	H	CI	CH _z OE t	Ms	MeaN CH2CH2OH
	Et	H	C1	CH ₂ OE t	Ms	Na Na
	Et	H	ČĪ	CH ₂ OE t	ăs	K
	Ēt	Ħ	ČĪ	CH ₂ OEt	Ms	" Ca _{1∕2}
10	Ēt	Ĥ	ČĪ	CH ₂ OE t	zK	Mg1/2
	Et	H H H H	ČÌ	CH ₂ OEt	Ms	EtN H3
	Et	Ĥ	ČĪ	CH ₂ OEt	Ms	i-PrN- Ha
	Εt	H	ČÌ	CH ₂ OE :	Ms	EtzN+ Hz
15	Ēτ	Ĥ	C1	CH ₂ OE t	2K	MeaN CH2CH2OH
	i-Pr	H	CI	CH ₂ OE t	Ms	Na
	i-Pr	Ħ	Cl	CH ₂ OE t	Ms	K
	i-Pr	H H	CI	CH ₂ OE t	Ms	Ca _{1/2}
	i-Pr	Ħ	Cl	CH ₂ OE t	en en	Mg1/2
20	i-Pr	H	CI	CH ₂ OE t	Ms	EtN- H ₃
	i-Pr	Ħ	Č1	CH ₂ OE t	Ms	i-PrN+ Ha
	i-P r	Ħ	Cl	CH ₂ OE t	Ms	EtzN+ Hz
	i-Pr	Ħ	Cl	CH ₂ OE t	Ms	MeaN+ CH2CH2OH
	Йe	Жe	ČÌ	CH ₂ OE t	Ms	i-PrN+ H ₃
25	Et	Me	ČÌ	CH ₂ OE t	Ms	Na
	Et	Ме	ČĪ	CH ₂ OE t	Ms	i-PrN+ Hs
	i-Pr	Ме	ČÌ	CH ₂ OE t	eK eK	i-PrN+ Ha
	Мe	H	0Me	CH ₂ OE t	Ms	Na
30	Мe	Ĥ	0Me	CH ₂ OE t	Ms	K
	Me	Ĥ ·	0Me	CHzOEt	Ms	Ca1/2
	Мe	Ĥ	0Me	CH ₂ OEt	Ms	Mg1/2
	Мe	Ħ	0Me	CH ₂ OE t	Ms	EtN+ H3
	Me	H	0Me	CH ₂ OEt	Ms	i-PrN+ Hs
35	Мe	Ħ	0Me	CH ₂ OE t	Ms	EtzN+ Hz
	Мe	H	0Me	CH _z OE t	Ms	MesN+ CHzCHzOH
	Et	H	0Me	CH ₂ OE t	Ms	Na
	Et	H	OMe `	CH ₂ OEt	Жs	K
40	Et	H	0Me	CH _z OE t	Ms	Ca _{1/2}
40	Et	H	0Me	CH _z OEt	Мs	Mg1/2
	Et	H	0Me	CH ₂ OEt	· Ms	EtN+ Ha
	Et	H	0Me	CH ₂ OE t	Ms	i-PrN+ Ho
	Et	. Н	0Me	CH ₂ OE t	Ms	EtzN+ Hz
45	Et	H	0Me	CH ₂ OE t	Ms	MesN* CH2CH2OH
	i-Pr	H	0Me	CH _z OE t	Ms	Na
	i-Pr,	H	0Me	CH ₂ OE t	2M	K
	i-Pr	H	0Me	CH ₂ OE t	Ms	Catz
				0112056	116	041/2

5	A	5	X	Y	Z	Q
J	i-P-	H	0Me	CH ₂ OE t	Ms	Mg1/2
	i-P r	H	0Me	CH ₂ OE t	Мs	Etn- H3
	i-Pr	H	0Me	CH ₂ OEt	Ms ·	i-PrN- H ₃
10	i-P r i-P r	H H	0Me 0Me	CH2OEt CH2OEt	Ms Ms	Et ₂ N ⁺ H ₂ Me ₃ N ⁺ CH ₂ CH ₂ OH
	Et	Me	0Me	CH ₂ OEt	Ms	i-PrN- Ha
	Me		Ме	CHMe0Me	Ms	Na
	Мe	H H H	Ме	СНМеОМе	2K	K
15	Мe	H	Me	CHMe0Me	Ms	Ca _{1/2}
	Ме Ме	H	Ме Ме	CHMeOMe CHMeOMe	Ms Ms	$Mg_1/2$ EtN+ H_3
	Me	H H	Me	CHMeOMe	Ms	i-PrN+ Ha
	Me	H	Ме	CHMe0Me	Ms	EtzN+ Hz
20	Ме	H	Ме	CHMe0Me	Ms	Me ₃ N ⁻ CH ₂ CH ₂ OH
	Et	H	Ме	CHMe0Me	Ms V-	Na v
	Et Et	H H H	Ме Ма	CHMe0Me CHMe0Me	Ms Ms	K Ca₁∕z
	Et	H	Me	CHMeOMe	Ms	Mg1/2
25	Et	H	Me	CHMe0Me	Ms	EtN+ H3
	Et	H H H H	Ме	CHMe0Me	Ms	i-PrN+ H ₃
	Et	H	Мe	CHMeOMe	Ms M-	EtzN+ Hz
	Et i-Pr	H	Ме Ме	CHMeOMe CHMeOMe	Ms Ms	MeaN+ CHaCHaOH Na
30	i-Pr	H	Me	CHMe0Me	Ms	K
	i-Pr		Жe	CHMe0Me	Ms	Ca1/2
	i-Pr	H	Ме	CHMeOMe	Ms	Mg1/2
35	i-Pr	H H H H	Жe	CHMeOMe CHMeOMe	Ms Ms	EtN- H ₃ i-P r N- H ₃
00	i-P r i-P r	n H	Йе Ме	CHMe0Me	ris Ms	EtzN* Hz
	i-P r	H	Ме	CHMe0Me	Ms	MeaN' CHzCHzOH
	· Me	Ме	Ме	CHMe0Me	Ms	i-PrN+ H ₃
40	Et	Ие	Ме	CHMe0Me	Ms	Na : n_u+ u
	Et i-Pr	Me Me	Me Me	CHMeOMe CHMeOMe	Ms Ms	i-PrN* H ₃ i-P r N* H ₃
	Me	H	C1	CHMeOMe	Ms	Na Na
	Ме	H	C1	CHMeOMe	ĭIs	K
45	Ме	H	C1	CHMe0Me	ğs	Ca _{1/2}
	Мe	H	C1	CHMeOMe	Ms Ma	Mg _{1/2} EtN ⁺ H ₃
	Йе Ме	H H	C1 C1	CHMeOMe CHMeOMe	eğ Zğ	i-PrN+ H ₃
	116	14		0111360116		4 1 2 11 11 4

		В	X	Y	Z	Ç.
5	Me	Н	Cl	CAMe0Me	Ms	EtaW- Ha
	Ме	Ĥ	Cl	CHMeOMe	Ms	MeaN+ CH2CH2OH
	Et	Ħ	Č1	CHMeOMe	Ms	Na
	Et	Ħ	C1	CHMeOMe	Ms	K
10	Et	H	C1	CHMeOMe	zK	Ca _{1/2}
	Et	H	Cl	CHMeOMe	Ms	Mg:/2
			Cl	CHMeOMe	iis Ms	Eth Ha
	Et	H			ns Ms	i-Prit Ha
	Et	H	Cl	CHMeOMe		
15	Εt	H	C1	CHMeOMe	Ms.	EtzN+ Hz
	£ŧ	H	C1	CHMeOMe	Ms T	MeaN - CH2CH2OH
	i-Pr	. <u>H</u>	C1	CHMe0Me	Ms	Na "
	i-Pr	H	C1	CHMeOMe	Яs	K
	i-Pr	H	C1	CHMe0Me	Мs	Ca _{1/2}
20	i-Pr	H	Cl	CHMe0Me	Ms	Mg:/2
	i-Pr	H	C1	CHMe0Me	Ms	EtN- Ha
	i-Pr	Н	CI	CHMeOMe	Иs	i-PrN* Ha
	i-Pr	H	Cl	CHMe0Me	Ms	EtzN+ Hz
25	i-Pr	H	Cl	CHMeOMe	Ms	MeaN' CH2CH2OH
25	Ме	Me	C1	CHMeOMe	Ms	i-PrN+ H ₃
	Et	Me	C1	CHMeOMe	Ms	Na
	Et	Мe	C1	CHMeOMe	Мs	i-PrN+ H3
	i-Pr	Ме	C1	CHMeOMe	гř	i-PrN* Hs
30	Me	H	0Me	CHMeOMe	Ms	Na .
••	Мe	H	0Me	CHMeOMe	Ms	K
	Me	H	0Me	CHMeOMe	Ms	Ca _{1/2}
	Йe	H	0Me	CHMeOMe	Ms	Mg1/2
	Йe	H	0Me	CHMeOMe	Ms	EtN+ H3
35	Йe	H	0Me	CHMeOMe	Ms	i-PrN* H3
	Me	Ħ	0Me	CHMeOMe	Ms	EtzN- Hz
	Me	Ä	0Me	CHMeOMe	Ms	MesN CH2CH2OH
	- Et	Ĥ	0Me	CHMeOMe	Ms	Na
	Et	H	0He	CHMeOMe	Ms	K
40	Et	H	0Me	CHMeOMe	Ms	Ca1/2
	Et	H	0Me	CHMeOMe	ž. Ž	Mg1/2
	Et	H	0Me	СНМеОме	ZK ZK	EtN H3
	Et	H	OMe	CHMeOMe	Ms	i-PrN+ Ha
	Et	л Н	orie OMe	CHMeOMe	Ms	EtzN- Hz
45	Et/	. п Н	one OMe	CHMeOMe	Ms	MeaN - CH2CH2OH
	_				ns Ms	Na Na
	i-Pr	· H	OMe	CHMeOMe		K K
	i-Pr	H	0Me	CHMeOMe	Ms	Λ .

5	A	В	X	Y	Z	Q
	i-P r	H	0Me	CHMeOMe	Мs	Ca
	i-Pr	Ĥ	0Me	СНМеОМе	ns 2M	Ca _{1/z}
	i-Pr	я	0Me	CHMeOMe	Ms 2K	Mg:/2 EtN H3
	i-P r	ਸ਼	0Me	CHMeOMe	Xs.	i-PrN- H ₃
10	i-P r	H H H	0Me	CHMeOMe	Ms	
	i-P r	Ħ	0Me	CHMeOMe	Ms	
	Et	Иe	0Me	CHMeOMe	Ms	Me ₃ N ⁻ CH ₂ CH ₂ OH i-PrN ⁻ H ₃
	Мe	H	йe	CHMeOEt	Ms	Na
15	Ме	Ĥ	Ме	CHMeOE t	Ms	K
,,	Мe	Ĥ	Ме	CHMeOEt	zK ZK	a Ca _{1∕2}
	Ме	Ä	Me	CHMeOE t	ns Ms	Ma
	Ме	H H	Me	CHMeOE t	Ms	Mg _{1/2} EtN- H ₃
	Мe	Ħ	Ме	CHMeOE t	Ms	i-PrN+ Ha
20	Me	Ĥ	Ме	CHMeOEt	ns Ms	EtzN+ Hz
	Ме	Ĥ	Me	.CHMeOE t	ns Ms	
	Et	H	Ме	CHMeOEt	ns Ms	MesN* CH2CH2OH
	Et	Ĥ	Ме	CHMeOE t		Na v
	Ēt	Ħ	Me	CHMeOE t	Ms.	K
25	+7	H	Me	CHMeOE t	· Ms	Ca _{1/2}
	Et Et	H	Ме	CHMeOE t	Ms	Mg _{1/z}
	F+	H	Me	CHMeOE t	Ms Ma	EtN+ H ₃
	Et Et	H	Ме	CHMeOE t	Ms	i-PrN+ H ₃
20	Et	H -	ne Me	CHMeOE t	aK Ma	EtzN ⁺ Hz
30	i-Pr	H	Ме	CHMeOE t	Ms	Me ₂ N ² CH ₂ CH ₂ OH
	i-Pr	H	ne Me	CHMeOE t	Ms N-	Na
	i-Pr	H	ne Me	CHMeOE t	2K	K
	i-Pr	H	ne Me		Ms V-	Ca _{1/2}
35	i-Pr	H	ne Me	CHMeOEt CHMeOEt	Ms M-	Mg1/2
	i-Pr	H	ne Me	CHMeOEt	Ms	EtN+ H ₃
	i-Pr	H-	ne Me	CHMeOE t	Ms u_	i-PrN+ H ₃
	i-Pr	H	ne Ne	CHMeOE t	Ms M-	EtzN* Hz
	Мe	Йe	ne Me	CHMeOEt	Ms M-	MeaN* CH2CH2OH
40	Et	Me	ne Me	CHMeOEt	Ys M-	i-PrN+ H ₃
	Et	ne Me	ne Me		Ms Ms	Na : nau+ m
	i-Pr			CHMeOEt	Ms V-	i-PrN* H ₃
	Me	Ме	Ме	CHMeOEt	zĶ -	i-PrN⁺ H₃
45	Ме	. Н Н	C1	CHMe0Et	Ms Ma	Na V
45	ne Me	п Н	C1	CHMeOEt	Ms Ma	K
	Me	n H	CI	CHMeOEt	Ms V-	Ca _{1/2}
	Me	n H	C1	CHMeOEt	Ms Ma	Mg _{1/2}
	116	11	Cl	CHMeOE t	Ms	EtN+ H ₃

5	A	В	X	Y	Z	Q
J	Мe	H	C1	CHMe0Et	Иs	i-PrN- Ha
	Ме	H	Cl	CHMeOEt	Мs	EtzN+ Hz
	Ме	H	Cl	CHMeOE t	Мs	MeaN CH2CH2OH
	Et	Ĥ	C1	CHMeOEt	Ms	Na
10	Et Et	Ħ	ČĪ	CHMeOE t	Ms	K
	Et	H H H H	CI	CHMeOEt	Ms	Ca _{1/2}
	Et	H	ČI	CHMeOEt	Мs	Mg _{1/2}
	Et	Ħ	CI	CHMeOEt	Мs	EtN Ha
15	Ēt	H	ĊĨ	CHMeOEt	Иs	i-PrN+ Ha
13	Et	Ħ	či	CHMeOEt	Ms .	EtzN- Hz
	Et	H	ČÌ	CHMeOEt	Ms	MeaN+ CH2CH2OH
	i-Pr	H	Ci	CHMeOEt	Ms	Na
	i-Pr	H	C1	CHMeOEt	en en	K
20	i-Pr	H	C1	CHMeOEt	Ms	Ca _{1/2}
	i-Pr	H	Cl	CHMeOEt	Ms	Mg1/2
	i-Pr	H	C1	CHMeOEt	Ms	EtN+ H ₃
	i-Pr	H	Cl	CHMeOEt	Ms	i-PrN+ Ha
	i-Pr	H	C1	CHMeOE t	Ms	EtzN* Hz
25	i-Pr	H	C1	CHMeOE t	Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
	Me	л Ме	C1	CHMeOE:	ns Ms	i-PrN+ Ha
	Et	ne Me	Cl	CHMeOE t	ns Ys	Na
	Et		C1	CHMeOE t	ns Ms	i-PTN+ Ha
	i-Pr	Me .	CI	CHMeOE t		i-PrN Ha
30		Ме		CHMeOEt	Ms M-	Na
	Ме	H + +	OMe	CHMeOE t	Ms N-	K
	Ме Ме	n H	OMe	CHMeOE t	Ms Ms	
	ne Ne	п Н	OMe	CHMeOE t	Ms Ma	Ca _{1/2}
35	ne Me	H.	OMe . OMe	CHMeOE t	Ms Ms	Mg _{1/2} EtN ⁺ H ₃
00	ne Me	H	. One OMe	CHMeOE t	ns Ms	i-PrN+ H ₃
	, Me	n H	One OMe	CHMeOE t	ns Ms	EtzN+ Hz
	ne ∙Me	H.		CHMeOEt		Me ₃ N CH ₂ CH ₂ OH
	Et	п. Н	OMe	CHMeOEt	Ms N-	Na Na
40			OMe		Ms W-	K
	Et Et	H H	OMe	CHMeOEt	Ms Ms	
			OMe	CHMeOEt	Ms M-	Ca _{1/2}
	Et	H	0Me	CHMeOEt	Ms Ma	Mg _{1/2} Etn- H ₃
	Et	. н	OMe	CHMeOEt	Ms Ms	i-PrN+ H ₃
45	Et Et	H	OMe	CHMeOEt CHMeOEt	Ms Ms	EtzN+ Hz
	Et Et	H	OMe	CHMeOEt CHMeOEt	Ms Ms	Me ₃ N + CH ₂ CH ₂ OH
		H	0Me	CHMeOEt	Ms Ms	Na
	i-Pr	H	0Me	CULIGUE	Ms	Na

5	A	В	Χ	Y	Z	Q.
ŭ	i-Pr	Н	0Me	CHMeOEt	Ms	K
	i-Pr	H	0Me	CHMeOE t	Ms	Ca:/2
	i-Pr	H	0Me	CHMeOEt	Ms	Mg1/2
	i-Pr	H	0Me	CHMeOE t	Ms	EtN+ H3
10	i-Pr	Ä	0Me	CHMeOEt	Ms	i-PrN+ H3
	i-Pr	H	0Me	CHMeOE t	Ms	EtzN+ H2
	i-Pr	Ħ	0Me	CHMeOEt	Ms	Me ₃ N ⁺ CH ₂ CH ₂ OH
	Et	Me	0Me	CHMeOE t	Ms	i-PrN+ Ha
15	Ме	H	Ме	CH ₂ CO ₂ Me	Ms	H
,,	Et	H	Ме	CH ₂ CO ₂ Me	Ms	H
	i-Pr	Ħ	Ме	CH ₂ CO ₂ Me	Ms	Ĥ
	Ме	H	Me	CH ₂ CO ₂ E t	Ms	Ħ
	Et	H	Ме	CH ₂ CO ₂ Et	Ms	H
20	i-Pr	H	Ме	CH _z CO _z Et	Ms	H
	Ме	H	Мe	CH ₂ CO ₂ Pr-i	Ms	H
	Et	H	Ме	CH ₂ CO ₂ Pr-i	Ms	H
	i-Pr	H	Me	CH ₂ CO ₂ Pr-i	Ms	H
	Ме	H	Мe	CHMeC02Me	Ms	H
25	Et	Ĥ	Me	CHMeCO ₂ Me	Ms	H
	i-Pr	H	Мe	CHMeC0 ₂ Me	Ms	H
	Мe	Ĥ	Me	CHMeCO ₂ Et	Ms	Н
	Et	H	Me	CHMeCO ₂ Et	Ms	H
30	i-Pr	Ĥ	Мe	CHMeCO ₂ Et	Ms	Н
	Мe	. H	Me	CHMeCO _z Pr-i	Ms	H
•	Et	H	Me	CHMeCO ₂ Pr-i	Ms	H
	i-Pr	H	Me	CHMeCO ₂ Pr-i	Ms	H
	Me	H	Мe	CH2CH2CO2Me	Ms	H
35	Et	H	Ме	CH ₂ CH ₂ CO ₂ Me	Ms	H
	i-Pr	H	Ме	CH2CH2CO2Me	Ms	· H
	Me	H	Мe	$CH_2CH_2CO_2Et$	Ms	H
	Εt	H	Мe	CH2CH2CO2Et	Ms	Н
40	i-Pr	H	Иe	$CH_2CH_2CO_2Et$	Ms	H
40	Mé	H	Иe	CH2CH2CO2Pr-i	Ms	H
	Et-	Ħ	Ме	CH2CH2CO2Pr-i	Ms	Н
	i-Pr	Н	Me	CH2CH2CO2Pr-i	Ms	H
	Мe	H	Мe	CH=CHOMe	Ms	Н
45	Et	, H	Мe	CH=CHOMe	Ms	Н
	i-Pr	H	Иe	CH=CHOMe	Ms	H
	Мe	H	Мe	CH=CHOE t	Мs	H
	Et	H	Me	CH=CHOE t	Ms	Ħ
						

	A	В	X	Y		 Q	
5				ON CHOP!	······		
	i-Pr	H	Ме	CH=CHOEt	Ms	H	
	Me	H	Мe	CH=CHOPr-i	Ms -	H H	
	Et	H	Me	CH=CHOPr-i	Ms V-		
10	i-Pr	H	Ме	CH=CHOPr-i	Ms H-	H	
. •	Me	H	C1	CH ₂ CO ₂ Me	Ms	H	•
	Et	H	Cl .	CH ₂ CO ₂ Me	Ms	H	
	i-Pr	H	C1	CH ₂ CO ₂ Me	Ms	H	
	Ме	H	CI	CH ₂ CO ₂ Et	Ms	Ħ	
15	Et	H	C1	CH ₂ CO ₂ Et	Ms	Ĥ	
	i-Pr	H	C1	CH ₂ CO ₂ Et	Ms	H	
	Мe	H	C1	CH ₂ CO ₂ Pr-i	Ms	H	
	Et	H	C1	CH ₂ CO ₂ Pr-i	Ms	H	
	i-Pr	H	C1	CH ₂ CO ₂ Pr-i	Ms	<u>H</u>	
20	Ме	H	C1	CHMeCO _z Me	Ms	H	
	Et	H	C 1	CHMeCO₂Me	Ms	H	
	i-Pr	Н	Cl	CHMeCO₂Me	Ms	Ħ	
	Ме	H	Cl.	CHMeCO ₂ Et	Ms -	. Н	
	Et	H	Cl	CHMeCO _z Et	Ms	H	
25	i-Pr	H	Cl	CHMeCO _z Et	Ms	H	
	Ме	H	C1	CHMeCO _z Pr-i	Ms	H	
	Et	H	C1	CHMeCO _z Pr-i	Ms	H	
	i-Pr	H	CI	CHMeCO ₂ Pr-i	Ms	Н	
30	Мe	. Н	Cl	CH ₂ CH ₂ CO ₂ Me	Ms	H	
-	- Et	H	C1	CH2CH2CO2Me	Ms	H	
	i-Pr	H	C1	CH ₂ CH ₂ CO ₂ Me	Ms	H	
	Ме	Н	C1	CH2CH2CO2Et	Иs	H	
	Et	. Н	CI	CH ₂ CH ₂ CO ₂ Et	Ms	H	
35	i-Pr	H	. C1	CH ₂ CH ₂ CO ₂ Et	Ms	H H	
	Me	Н	Cl	CH2CH2CO2Pr-i	Ms	Н	
	Et	Н	C1	CHzCHzCOzPr-i	Ms	H	
	i-Pr	H	Cl	CH2CH2CO2Pr-i	Ms	H	
	Ме	H	C1	CH=CHOMe	Ms	H	
40	Et	Ĥ	C1	CH=CHOMe	Ms	H	
	i-Pr	H	C1	CH=CHOMe	Ms	H	
	Me	H	CI ·	CH=CHOE t	Ms	H	
	Et-	. Н	C1	CH=CHOE t	Ms	H	-
45	i-Pr	H	CI	CH=CHOEt	Ms	H H	
40	Мe	H	ČĪ	CH=CHOPr-i	Ms	H	
	Et	Ä	či	CH=CHOPr-i	Ms	Ĥ	
	i-Pr	Ĥ	ČÌ	CH=CHOPr-i	Ms	H	
	1-11	11	<u>01</u>	011-011011-1	112		

When the compound of the present invention is to be used as an agricultural or horticultural herbicide, it is usually mixed with a suitable carrier, for instance, a solid carrier such as clay, talc, bentonite or diatomaceous earth, or a liquid carrier such as water, an alcohol (such as methanol or ethanol), an aromatic hydrocarbon (such as benzene, toluene or xylene), a chlorinated hydrocarbon, an ether, a ketone, an ester (such as ethyl acetate) or an acid amide (such as dimethylformamide). If desired, an emulsifier, a dispersing agent, a suspending agent, a penetrating agent, a spreader or a stabilizer may be added to prepare an optional formulation such as a liquid formulation, an emulsifiable concentrate, a wettable powder, a dust, a

granule or a flowable.

Further, if desired, other herbicides, various insecticides, bacteriocides, plant regulating agents or synergism agents may be combined at the time of the preparation of the formulations or at a time of the application of the herbicides.

As other herbicides to be combined with the herbicide of the present invention, there may be mentioned, for instance, compounds disclosed in Farm Chemicals Handbook, the 73rd Edition (1987). Among them, there may be mentioned, for example, atrazine, cyanazine, alachlor, metolachlor, EPTC, 2,4-D, butylate, dicamba, bromoxynil and tridiphane. Further, N-[(4,6-dimethoxypyrimidin-2-yl)-aminocarbonyl]-3-chloro-4-methoxycarbonyl-1-methylpyrazole-5-sulfonamide or N-[(4,6-dimethoxypyrimidin-2-yl)-aminocarbonyl]-3-bromo-4-methoxycarbonyl-1-methylpyrazole-5-sulfonamide as disclosed in U.S. Patent 4,668,277 may also be combined with the herbicide of the present invention.

The dose varies depending upon the application site, the season for application, the method for application, the type of the crop plant, etc. In general, however, the dose is usually within a range of from 0.001 to 10 kg per hectare as the amount of the active ingredient.

Now, Formulation Examples of the herbicides containing the compounds of the present invention as active ingredients, will be given. However, it should be understood that the present invention is by no means restricted to such specific Examples. In the following Formulation Examples, "parts" means "parts by weight".

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FORMULATION EXAMPLE 1: Wettable powder Compound No. 3 of the present invention 60 parts

Zeeklite PFP (tradename for a kaolin-type clay, manufactured by Zeeklite Industries, Co., Ltd.) 33 parts

Sorpol 5039 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by

Toho Chemical Co., Ltd.) 5 parts

25 Carplex (tradename for a coagulation-preventing agent composed of a mixture of a surfactant and fine silica powder, manufactured by Shionogi Pharmaceutical Co., Ltd.) 2 parts

The above ingredients are homogeneously pulverized and mixed to form a wettable powder.

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FORMULATION EXAMPLE 2: Wettable powder Compound No. 7 of the present invention 60 parts

Zeeklite PFP (tradename for a kaolin-type clay, manufactured by Zeeklite Industries, Co., Ltd.) 33 parts

Sorpol 5039 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by

Toho Chemical Co., Ltd.) 5 parts

Carplex (tradename for a coagulation-preventing agent composed of a mixture of a surfactant and fine silica powder, manufactured by Shionogi Pharmaceutical Co., Ltd.) 2 parts

FORMULATION EXAMPLE 3: Wettable powder Compound No. 15 of the present invention 60 parts
Zeeklite PFP (tradename for a kaolin-type clay, manufactured by Zeeklite Industries, Co., Ltd.) 33 parts
Sorpol 5039 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by
Toho Chemical Co., Ltd.) 5 parts

Carplex (tradename for a coagulation-preventing agent composed of a mixture of a surfactant and fine silica powder, manufactured by Shionogi Pharmaceutical Co., Ltd.) 2 parts

FORMULATION EXAMPLE 4: Wettable powder Compound No. 21 of the present invention 60 parts
Zeeklite PFP (tradename for a kaolin-type clay, manufactured by Zeeklite Industries, Co., Ltd.) 33 parts
Sorpol 5039 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by
Toho Chemical Co., Ltd.) 5 parts

Carplex (tradename for a coagulation-preventing agent composed of a mixture of a surfactant and fine silica powder, manufactured by Shionogi Pharmaceutical Co., Ltd.) 2 parts

FORMULATION EXAMPLE 5: Wettable powder Compound No. 25 of the present invention 60 parts Zeeklite PFP (tradename for a kaolin-type clay, manufactured by Zeeklite Industries, Co., Ltd.) Sorpol 5039 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by Toho Chemical Co., Ltd.) 5 parts

Carplex (tradename for a coagulation-preventing agent composed of a mixture of a surfactant and fine silica powder, manufactured by Shionogi Pharmaceutical Co., Ltd.)

FORMULATION EXAMPLE 6: Wettable powder Compound No. 35 of the present invention 60 parts 70 Zeeklite PFP (tradename for a kaolin-type clay, manufactured by Zeeklite Industries, Co., Ltd.) 33 parts Sorpol 5039 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by Toho Chemical Co., Ltd.) 5 parts Carplex (tradename for a coagulation-preventing agent composed of a mixture of a surfactant and fine silica

FORMULATION EXAMPLE 7: Emulsifiable concentrate Compound No. 3 of the present invention 1.5 parts

2 parts

Xylene 78.5 parts

20 N,N-dimethylformamide 15 parts

powder, manufactured by Shionogi Pharmaceutical Co., Ltd.)

Sorpol 2680 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by Toho Chemical Co., Ltd.) 5 parts

The above ingredients are homogeneously mixed to obtain an emulsifiable concentrate. 25

FORMULATION EXAMPLE 8: Emulsifiable concentrate Compound No. 11 of the present invention parts

Xylene 78.5 parts

> N,N-dimethylformamide 15 parts

Sorpol 2680 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by Toho Chemical Co., Ltd.) 5 parts

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FORMULATION EXAMPLE 9: Flowable Compound No. 3 of the present invention 40 parts Agrizole B-710 (tradename for a nonionic surfactant, manufactured by Kao Corporation) Runox 1000C (tradename for an anionic surfactant, manufactured by Toho Chemical Co., Ltd.) 0.5 part 1% Rodopol water (tradename for a thickener, manufactured by Rhone-Poulenc) Water 29.5 parts

The above ingredients are homogeneously mixed to form a flowable.

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FORMULATION EXAMPLE 10: Flowable Compound No. 10 of the present invention 40 parts Agrizole B-710 (tradename for a nonionic surfactant, manufactured by Kao Corporation) 10 parts Runox 1000C (tradename for an anionic surfactant, manufactured by Toho Chemical Co., Ltd.) 0.5 part 1% Rodopol water (tradename for a thickener, manufactured by Rhone-Poulenc)

Water 29.5 parts

FORMULATION EXAMPLE 11: Liquid formulation Compound No. 39 of the present invention 30 parts Nippol (tradename for a nonionic surfactant, manufactured by Nissan Chemical Industries, Ltd.) 10 parts Water 55 60 parts

The above ingredients are homogeneously mixed to obtain a liquid formulation.

FORMULATION EXAMPLE 12: Liquid formulation Compound No. 40 of the present invention 30 parts
Nippol (tradename for a nonionic surfactant, manufactured by Nissan Chemical Industries, Ltd.) 10 parts
Water 60 parts

FORMULATION EXAMPLE 13: Liquid formulation Compound No. 46 of the present invention 30 parts
Nippol (tradename for a nonionic surfactant, manufactured by Nissan Chemical Industries, Ltd.)
10 parts
Water 60 parts

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FORMULATION EXAMPLE 14: Liquid formulation Compound No. 41 of the present invention 10 parts
Sorpol W-150 (tradename for a nonionic surfactant, manufactured by Toho Chemical Co., Ltd.) 10 parts
Water 80 parts

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The above ingredients are homogeneously mixed to form a liquid formulation.

In their use, the above wettable powders, emulsifiable concentrates, flowables or liquid formulations are diluted with water from 50 to 1,000 times and applied so that the respective active ingredients will be from 0.001 to 5 kg per hectare.

The compounds of the present invention are applicable not only to agricultural and horticultural fields such as upland fields, paddy fields and orchards, but to non-agricultural fields such as athletic fields, vacant fields and railway sides for the control of various weeds. The dose in their application varies depending upon the application site, the season for application, the type of crop plants, etc. However, it is usually within a range of from 0.001 to 5 kg per hectare.

Now, the herbicidal activities of the compounds of the present invention will be described with respect to specific Test Examples.

TEST EXAMPLE 1: Test on the herbicidal effects in soil treatment

A plastic box having a length of 15 cm, a width of 22 cm and a depth of 6 cm was filled with a sterilized diluvium soil, and seeds Echinochloa crus-galli, Setaria viridis, Eleusine indica, Digitaria adscendens, Panicum dichotomiflorum. Abutilon theophrasti, Amaranthus lividus, Polygonum longisetum and Zea mays were sown, and tubers of Cyperus esculentus were further planted. The soil was covered thereon in the thickness of about 1.5 cm, and then a herbicide solution was applied onto the surface of the soil uniformly so that the active ingredient is distributed at a predetermined concentration. The herbicide solution was prepared by diluting a wettable powder, an emulsifiable concentrate, a liquid formulation or a flowable with water and applied onto the entire soil surface by means of a small spray. Three weeks after the application of the herbicidal solution, the herbicidal effects against each weed were determined on the basis of the following standard ratings. The results thereby obtained are shown in Table 6. The Compound Nos. correspond to the Compound Nos. in Table 3.

Standard ratings: 5: Growth control rate of more than 90% (almost completely withered)

- 4: Growth control rate of from 70 to 90%
 - 3: Growth control rate of from 40 to 70%
 - 2: Growth control rate of from 20 to 40%
 - 1: Growth control rate of from 5 to 20%
 - 0: Growth control rate of less than 5% (almost non-effective)

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The above growth control rates were calculated by the following equation: Growth control rate (%) = $(1-\frac{I}{N})^{\times}$ 100 where

T: Weight of the weed growth above the soil surface of the treated area

N: Weight of the weed grown above the soil surface of the non-treated area

TEST EXAMPLE 2: Test on the herbicidal effects in foliage treatment

A plastic box having a length of 15 cm, a width of 22 cm and a depth of 6 cm was filled with a sterilized diluvium soil, and seeds of Echinochloa crus-galli, Setaria viridis, Eleusine indica, Digitaria adscendens, Panicum dichotomiflorum, Xanthium strumarium, Abutilon theophrasti, Amaranthus lividus, Polygonum longisetum and Zea mays were spot-wisely sown, and tubers of Cyperus esculentus were further planted. Then, the soil was covered thereon in a thickness of about 1.5 cm. When the various weeds and crops grew to the 2 or 3 leaf stage, a herbicidal solution was uniformly sprayed on the foliages so that the active ingredient is applied in a predetermined concentration.

The herbicidal solution was prepared by diluting the wettable powder, the emulsifiable concentrate, the liquid formulation or the flowable as described in the above Formulation Examples with water and applied onto the entire surface of the foliages of the weeds and the crop plants by a small spray. Two weeks after the application of the herbicide solution, the herbicidal effects against each weed were determined on the basis of the standard ratings described in Test Example 1, and the phytotoxicity against each crop plant was determined on the basis of the standard ratings in Test Example 1. The results are shown in Table 7. The Compound Nos. in Table 7 correspond to the Compound Nos. in Table 3.

In Tables 6 and 7, the following abbreviations are used:

Dose: Dose of active ingredient (g/are)

EC: Echinochloa crus-galli (barnyardgrass)

20 SE: Setaria viridis (green foxtail)

EL: Eleusine indica (goosegrass)

DI: Digitaria adscendens (large crabgrass)

PA: Panicum dichotomiflorum (fall panicum)

AB: Abutilon theophrasti (velvet leaf)

25 AM: Amaranthus lividus (livid amaranth)

PO: Polygonum longisetum (persicaria blumei gross)

XA: Xanthium strumarium (cocklebur)

CY: Cyperus esculentus (yellow nutsedge)

ZE: Zea mays (corn)

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Table 6

_	Table 6											
10	Compound No.	Dose	EC	SE	EL	DI	PA	AB	AM	PO	CY	ZE
15	1	0.5	5 5 5	5 5 5	555	555	555	555	5 5 5	555	5 5 5	0 0
20	2	0.5 1 2	5 5 5	5 5 5	5 5 5	555	555	555	555	555	5 5 5	000
25	3	0.5 1 2	5 5 5	5 5 5	_ເ ນ ເນ ເນ	555	ກວກ	555	555	5 5 5	5 5 5	000
30	4	0.5 1 2	5 5 5	5 5 5	555	555	555	5555	555	5 5 5	555	0 0
35	6	0.5 1 2	5 5 5	5 5 5	555	നധന	555	555	5 5 5	555	555	000
40	7	0.5	5 5 5	5 5 5	5 5 5	555	555	555	555	5 5 5	5 5 5	0 0 0
45	8	0.5	5 5 5	555	555	555	555	555	555	555	5 5 5	0 0 0

0 282 944

Table 6 (continued)

5			1		1	1	1			,		
10	Compound No.	Dose	EC	SE	EL	DI	PA	AB	AM	PO	CY	ZE
15	9	0.5 1 2	555	555	555	555		555	555	5 5 5	5 5 5	000
20	10	0.5 1 2	555	5 5 5	555	555	555	555	ວພວ	5 5 5	555	000
25	11	0.5 1 2	5 5 5	555	மன்க	ភភភភ	5 5 5	555	₅	5 5 5	555	0
30	12	0.5 1 2	555	ភភភភ	വവവ	555	555	ភភភ	5555	ភភភ	5 5 5	0 0
35	13	0.5	555	מומומו	ភភភ	555	555	ວວວວ	555	555	5 5 5	0 0
40	14	0.5 1 2	555	555	555	555	5 5 5	5 5 5	555	555	5 5 5	0 0 0
45	15	0.5 1 2	555	5 5 5	555	555	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	0 0

Table 6 (continued)

5		·	, 	,				,				
10	Compound No.	Dose	EC	SE	EL	DI	PA	AB	AM	PO	CY	ZE
15	16	0.5 1 2	555	555	555	555	555	555	555	555	555	000
20	17	0.5 1 2	5 5 5	555	555	555	വധവ	555	សលស	555	555	000
25	18	0.5 1 2	555	555	555	ນ ນ ນ	555	555	ភភភ	5 5 5	5 5 5	0 0
30	19	0.5 1 2	555	555	555	ភភភភ	555	555	555	555	5 5 5	0 0
35	20	0.5 1 2	សសស	555	555	555	555	555	555	5 5 5	5 5 5	0 0
40	21	0.5	555	555	555	5 5 5	555	555	555	555	555	0 0
45	22	0.5 1 2	555	555	555	555	555	555	555	555	555	0 0

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Table 6 (continued)

5		 	<u>. </u>										
10	Compound No.	Dose	EC	SE	EL	DI	PA	AB	AM	PO	CY	ZE	
15	23	0.5 1 2	555	555	555	5 5 5	ចេចច	555	555	5 5 5	5555	000	
20	24	0.5 1 2	555	555	555	555	555	555	555	555	555	0 0 0	
25	25	0.5 1 2	കക്ക	ភភភ	555	555	555	5 5 5 5	555	5 5 5	555	0	
30	26	0.5 1 2.	ຜວເວ	5 5 5	555	ភភភភ	555	555	555	555	555	0 0 0	
35	27	0.5	555	555	555	555	555	555	555	555	5555	0 0 0	
40	28	0.5 1 2	555	555	555	555	555	5 5 5	555	5 5 5	555	0 0	
45	29 .	0.5	555	555	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	555	0 0 0	

Table 6 (continued)

10	Compound No.	Dose	EC	SE	EL	DI	PA	AB	AM	PO	CY	ZE
15	30	0.5	5 5 5	ຜນຜ	555	5 5 5	5 5 5	555	555	5 5 5	5 5 5	0 0
20	34	0.5 1 2	555	555	ຜນ	555	5 5 5	5 5 5	555	5 5 5	555	0 0
25	35	0.5 1 2	5 5 5	ភភភភ	ភភភភ	555	555	555	555	5 5 5	555	0 0
30	36	0.5 1 2	555	555	ភភភភ	555	555	555	555	5 5 5	555	0
35	37	0.5 1 2	555	555	ភភភភ	សសស	555	555	555	·5555	ភេសភ	0 0
40	39	0.5 1 2	555	555	555	555	555	ភភភ	ភភភ	555	555	0 0 0
45	40	0.5 1 2	555	555	555	5555	ភភភភ	555	ភភភ	5 5 5	555	0

Table 6 (continued)

_					<u> </u>			· .				
10	Compound No.	Dose	EC	SE	EL	ום	PA	AB	AM	PO	CA	Æ
15	41	0.5 1 2	555	ភភភភ	555	555	5555	555	ភភភ	555	555	000
20	42	0.5 1 2	ស	555	555	5 5 5	555	555	555	555	ໝໝໝ	0 0
25	43	0.5 1 2	សសស	555	555	5 5 5	5 5 5	5555	5 5 5	555	5555	0
30	44	0.5 1 2	555	555	555	555	5 5 5	555	555	555	555	0 0
35	45	0.5 1 2	555	555	5 5 5	555	5 5 5	5 5 5	555	555	555	0 0
40	46	0.5 1 2	555	555	5 5 5	5 5 5	5 5 5	555	555	555	555	0 0
	47	0.5 1 2	555	555	555	5 5 5	5 5 5	5 5 5	555	5 5 5	5 5 5	0 0

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Table 6 (continued)

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10	Compound No.	Dose	EC	SE	EL	DI	P <u>a</u>	AB	AM	PO	CA	ZE
15	48	0.5	വവവ	ຜເນຜ	555	5 5 5	555	5 5 5	5 5 5	5 5 5	555	000
20	49	0.5 1 2	ភភភ	ເນເກເນ	ທຕກ	សលស	ភភភភ	ភ 555	555	5 5 5	5 5 5	000
25	50	0.5 1 2	ភភភ	555	555	ភភភ	555	យសស	555	555	5 5 5	0 0
30	56	0.5 1 2	555	5 5 5	555	5 5 5	ភភភ	សសស	555	5 5 5	5 5 5	0 0
35	58	0.5 1 2	555	5 5 5	5 5 5	555	555	555	555	5 5 5	555	0 0
40	61	0.5	5 5 5	5 5 5	5 5 5	5 5 5	555	555	555	5555	5 5 5	0 0
45	63	0.5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	555	555	000

Table 6 (confined)

			• .					<u> </u>				
10	Compound No.	Dose	EC	SZ	EL	DI	<u>Pa</u>	EA	AM	PO	CY	Œ
15	64	0.5 1 2	555	555	5 5 5	5 5 5	555	5 5 5	ລະວາວ	555	555	0 0 0
20	65	0.5 1 2	555	555	555	555	ກ ກ ກ	555	555	555	555	0 0
25	66	0.5 1 2	5 5 5	5 5 5	5555	5 5 5	5 5 5	ເລເລເລ	555	555	555	0 0 0
30	67	0.5 1 2	555	555	555	555	5 5 5	555	555	5 5 5	5 5 5	0 0 0
35	68	0.5 1 2	555	555	5 5 5	555	555	555	555	5 5 5	5 5 5	0 0 0
40	Reference Example A	4 8 16	3 4 5	1 2 3	3 4 5	3 4 5	1 2 3	4 5 5	555	5 5 5	0 0 1	0 0 1
45	Reference Example B	4 8 16	5 5 5	555	555	555	555	1 2 3	1 2 3	1 .2 3	2 3 4	0 0 1

Table 7

5				· · · · · · ·									
10	Compound No.	Dose	EC	SE	EL	DI	PA	AB	AM	PO	XA	CY	ZE
15	1	0.5 1 2	5 5 5	5 5 5	5 5 5	555	555	555	555	5 5 5	555	555	000
20	2	0.5 1 2	ភភភភ	555	555	555	555	555	555	5 5 5	555	5 5 5	0
25	3	0.5 1 2	555	_ວ ວວວ	ភភភ	555	555	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	0 0
30	4	0.5 1 2	555	555	555	555	5 5 5	555	5 5 5	555	5 5 5	5 5 5	0 0
35	6 .	0.5 1 2	5 5 5	5 5 5	555	555	555	555	555	5 5 5	555	5 5 5	0 0 0
40	7	0.5 1 2	5 5 5	555	5 5 5	555	555	5 5 5	5 5 5	5 5 5	555	5 5 5	0 0 0
45	8 .	0.5	555	5 5 5	555	555	555	555	555	555	555	555	0 0 0

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Table 7 (continued)

10	Compound No.	Dose	EC	SE	EL	DI	PA	AB	AM	PO	ΧA	CY	ZE
15	9	0.5 1 2	5555	555	555	555	555	ກກກ	555	សលស	សលស	ສຣສ	000
20	10	0.5 1 2	ភភភ ភ	555	555	555	₅	សលស	555	തത്ത	ກກກ	ເລເລເລ	0 0 0
25	. 11	0.5 1 2	555	ភភភ	555	555	555	₅	ເລເລເລ	555	555	555	0 0
30	12	0.5 1 2	555	555	555	555	5 5 5	555	555	555	5 5 5	5 5 5	0 0

0.5 13, 5 5 5 5 0.5 5 5 5 5 5 5 $\bar{2}$ 5 5 0.5

Table 7 (continued)

•												_	
10	Compound No.	Dose	EC	SE	EL	ום	P <u>A</u>	AB	A:M	PO	XA	CY	ZE
15	16	0:5 1 2	5555	555	555	555	ភភភភ	សសស	ກກກ	ភភភ	555	555	0 0
20	17	0.5 1 2	សយស	555	ധയധ	ភភភភ	555	ម ម ម	555	ຸລຸຣຸຣ	555	555	0 0
25	18	0.5 1 2	555	555	5 5 5	ເວເວເວ	5 5 5	5555	5 5 5	555	555	5 5 5	0 0
30	19	0.5 1 2	555	555	5 5 5	5 5 5	5 5 5	555	555	5 5 5	5 5 5	5 5 5	0 0 0
35	20	0.5 1 2	555	555	5 5 5	5 5 5	555	5 5 5	5 5 5	555	5 5 5	5 5 5	0 0
40	21	0.5 1 2	5 5 5	555	5 5 5	555	5 5 5	555	5 5 5	555	5 5 5	555	0 0 0
45	22.	0.5 1 2	5 5 5	555	5 5 5	5 5 5	5 5 5	5 5 5	555	555	555	5 5 5	0 0 0

Table 7 (continued)

5		· 			Ta	pie ((CO1)	. con ac					
10	Compound No.	Dose	EC	SE	EL	DI	P <u>4</u>	AB	ΑM	PO	XA	CÄ	Z=
15	23	0.5 1 2	សសស	សសល	សសស	555	നവവ	សសស	យយយ	555	_ວ ່ວ ວ	യയത	0 0
20	24	0.5 1 2	សសស	നന്ന	ທ ເນ ເນ	555	យុសស	ອ່ວນ	. 555	555	ភភភភ	യയയ	0 0
25	25	0.5 1 2	നനന	ധധധ	555	555	555	555	555	₅ 555	555	ວວວວ	0 0 0
30	26	0.5 1 2	₅ 555	555	555	555	555	555	555	555	555	ភភភភ	0 0 0
35	27.	0.5 1 2	ភភភភ	555	5 5 5	5 5 5	555	555	555	ស	5 5 5	555	0 0 0
40	28	0.5 1 2	5 555	555	5 5 5	5 5 5	ភភភភ	555	5 5 5	_ວ	5 5 5	5 5 5	0 0 0
	29 -	0.5 1 2	ភភភភ	555	5 5 5	5 5 5	5 5 5	555	5 5 5	5 5 5	5 5 5	555	0 0

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Table 7 (continued)

•													
10	Compound No.	Dose	EC	SE	EL	DI	P.A.	AB	ΑM	PO	XA	СÃ	ZE
15	30	0.5 1 2	ឆ្ងេចឆ	555	សសស	555	555	555 5	ភភភភ	555	555	ຫ ວ ຫ	0 0 0
20	34	0.5	ភភភភ	555	555	555	555	555	ភភភ	555	555	ភភភ	0 0
25	35	0.5	ភភភភ	555	555	555	5 5 5	555	5 5 5	555	555	555	0 0
30	36	0.5 1 2	555	555	5 5 5	555	5 5 5	555	555	555	555	555	0 0 0
35	37	0.5 1 2	מממ	555	5 5 5	555	555	555	555 5	555	555	555	0 0 0
40	39	0.5	555	5 5 5	5 5 5	5 5 5	555	ភភភ	555	555	555	555	0 0
45	40	0.5 1 ·2	ភភភភ	555	555	5555	5 5 5	555	ភភភ	55 5	5 5 5	5 5 5	0 0 0

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Table 7 (continued)

5		·											
10 15	Compound No.	Dose	EC	SE	EL	DI	P.4	AB	ΑM	PO	XA	CĂ	ZE
15	41	0.5	555	5 5 5	5 5 5	5 5 5	5555	5555	5555	5555	555	555	000
20	42	0.5 1 2	សសស	5555	555	555	555	555	5 5 5	5 5 5	5 5 5	5 5 5	000
25	43	0.5 1 2	555	555	555	555	5 5 5	5 5 5	555	5 5 5	5 5 5	5 5 5	0 0 0
30	44	0.5 1 2	5 5	555	555	555	555	555	5 5 5	555	555	555	000
35	45	0.5 1 2	555	555	555	555	555	5 5 5	5 5 5	555	555	5 5 5	000
40	46	0.5 1 2	សសស	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	555	5 5 5	555	5 5 5	0 0
45	47	0.5	555	555	5 5 5	5 5 5	555	555	555	5 5 5	555	5 5 5	0 0 0

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Table 7 (continued)

٠5					Tai	ole 7	(con	dnuec	i) 				
10	Compound No.	Dose	EC	SE	EL	DI	P.4	AB	ΑM	PO	XA	СĂ	ZΕ
15	48	0.5	555	555	5 5 5	5 5 5	ຜຜດ	555	വധധ	ກກກ	ധധധ	აიან	000
20	49	0.5 1 2	555	5 5 5	5 5 5	5 5 5	សលល	555	ភភភ ភ	សលស	ຜຜຜ	555	000
25	50	0.5	5 5 5	5 5 5	5 5 5	5 5 5	555	555	5 5 5	ភភភ	555	555	000
30	56	0.5 1 2	5 5 5	555	5 5	555	5 5 5	5 5 5	555	555	555	555	0 0 0
35	58 ,	0.5 1 2	5 5 5	555	555	5 5 5	5 5 5	555	555	555	555	ភូទូស	0 0 0
40	61	0.5 1 2	555	. 5 5 5	5 5 5	555	5 5 5	5 5 5	555	5 5 5	555	555	0 0 0
45	63	0.5	5 5 5	5 5 5	5 5 5	555	5 5 5	5 5 5	555	555	555	555	0 0

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Table 7 (continued)

5		Table , (Samuella,)											
10	No.	Dose	EC	SĒ	EL	DI	P <u>4</u>	AB	AM	PO	XA	CĂ	ZE
15	6 1	0.5 1 2	₅ 555	555	ລເລເລ	555	555	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	0 0
20	65	0.5 1 2	555	້ອຄອ	555	555	555	555	555	555	555	5555	000
25	66	0.5 1 2	555	5 5 5	555	5 5 5	555	5 5 5	555	5 5 5	5 5 5	5 5 5	000
30	67	0.5 1 2	· 5 5 5	555	555	5 5 5	555	5 5 5	555	5 5 5	5 5 5	5 5 5	0 0 0
35	68	0.5 1 2	555	555	555	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	0 0
	Reference Example A	4 8 16	3 4 5	1 2 3	2 3 4	3 4 5	0 1 2	3 5 5	5 5 5	555	4 5 5	0 0 1	0 1 2
	Reference Example B	. 8 16	4 4 5	3 4 5	3 4 5	4 4 5	3 4 5	0 1 2	2 3 4	2 3 4	0 1 2	1 2 3	0 1 2

In Tables 6 and 7, the Comparative Compounds are as follows:

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Comparative Compound A: Atrazine

Comparative Compound B: Alachlor

$$C_{z}H_{5}$$

$$N = CH_{z}OCH_{3}$$

$$CCH_{2}C \mathcal{L}$$

$$II$$

$$C_{z}H_{5} = 0$$

Claims

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1. A pyrazole derivative having the formula:

B
$$C \longrightarrow Z$$

N O Q

A O Q

wherein A is an alkyl group having from 1 to 3 carbon atoms, an alkenyl group having from 2 to 4 carbon atoms or an alkynyl group having from 2 to 4 carbon atoms; B is a hydrogen atom, an alkyl group having from 1 to 3 carbon atoms, an alkoxy group having from 1 to 3 carbon atoms, an alkoxyalkyl group having from 1 to 3 carbon atoms, an alkylthio group having from 2 to 4 carbon atoms, an alkylthioalkyl group having from 2 to 4 carbon atoms or an alkoxycarbonyl group having from 2 to 4 carbon atoms; X is an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms, a halogen atom, a nitro group, a cyano group, a haloalkyl group having from 1 to 6 carbon atoms, an alkoxyalkyl group having from 2 to 6 carbon atoms, an alkylcarbonyl group having from 2 to 6 carbon atoms, an alkoxycarbonyl group having from 1 to 6 carbon atoms, an alkoxycarbonyl group having from 1 to 6 carbon atoms, an alkoxycarbonyl group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon

0 282 944

atoms or an alkylthioalkyl group having from 2 to 6 carbon atoms; Y is a -COOR1 group (wherein R1 is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 3 to 8 carbon atoms, a cycloalkylalkyl group having from 4 to 8 carbon atoms, an alkynyl group having from 3 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, a haloalkyl group having from 1 to 6 carbon atoms, a halocycloalkyl group having from 3 to 8 carbon atoms, a haloalkynyl group having from 3 to 6 carbon atoms, a haloalkenyl group having from 2 to 6 carbon atoms or a phenyl group which may be substituted by alkyl having from 1 to 3 carbon atoms, halogen, nitro or alkoxy having from 1 to 3 carbon atoms), a -COO-L-OR1 group (wherein L is an alkylene group having from 1 to 6 carbon atoms which may be substituted by alkyl having from 1 to 3 carbon atoms, and R1 is as defined above), a -COO-L-R2 group (wherein L is as defined above, and R2 is a phenyl group which may be substituted by alkyl having from 1 to 3 carbon atoms, halogen, nitro or alkoxy having from 1 to 3 carbon atoms), a -COO-M group (wherein M is a 3 to 6-membered alicyclic residue containing not more than 2 sulfur or oxygen atoms and formed by a linkage of from 1 to 4 carbon atoms), a -COO-L-M group (wherein L and M are as defined above), a -COO-L-O-L-R2 group (wherein L and R2 are as defined above), a -COO-L-S(O)n-R1 group (wherein L and R1 are as defined above, and n is an integer of from 0 to 2), a -CON(R3)(R4) group (wherein each of R3 and R4 is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 3 to 8 carbon atoms, a cycloalkylalkyl group having from 4 to 8 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms, an alkynyl group having from 2 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, a haloalky! group having from 1 to 6 carbon atoms, a halocycloalky! group having from 3 to 8 carbon atoms, a haloalkynyl group having from 2 to 6 carbon atoms, a haloalkenyl group having from 2 to 6 carbon atoms or a phenyl group which may be substituted by alkyl having from 1 to 3 carbon atoms, halogen, nitro or alkoxy having from 1 to 3 carbon atoms), a

group (wherein n is an integer of from 4 to 6), a

group (wherein R5 is an alkyl group having from 1 to 3 carbon atoms), a

group, a -CONHSO₂CH₃ group, a -CONHSO₂CF₃ group, a -COO-L-N(R3)(R4) group (wherein L, R3 and R4 are as defined above), a -COO-L-CO-R1 group (wherein L and R1 are as defined above), a -COO-L-CO-R1 group (wherein L and R1 are as defined above), a -COO-L-CN group (wherein L is as defined above), a -COO-L-NO₂ group (wherein L is as defined above), a -COO-N=C(R6)(R7) group (wherein each of R6 and R7 which may be the same or different is an alkyl group having from 1 to 3 carbon atoms), a

group (wherein n is an integer of from 4 to 6), a -COO-L-O-SO₂-R1 group (wherein L and R1 are as defined above), a -COO-L-O-CO-R1 group (wherein L and R1 are as defined above), a -COO-L-O-L-O-R1 group (wherein L and R1 are as defined above), a -COO-L-Si(R5)₃ group (wherein L and R5 are as defined above), a -C(O)S-R1 group (wherein R1 is as defined above), a -C(S)O-R1 group (wherein R1 is as defined above), a -L-O-R1 group (wherein L and R1 are as defined above), a -L-O-L-O-R8 group (wherein L is as defined above, and R8 is a hydrogen atom or an alkyl group

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having from 1 to 6 carbon atoms), a -L-O-M group (wherein L and M are as defined above), a -L-O-L-M group (wherein L and M are as defined above), a -L-NR8R9 group (wherein R8 is as defined above, and R9 is an alkyl group having from 1 to 6 carbon atoms), a -L-O-CH2Ph group (wherein L is as defined above), -L-O-L-COOR9 group (wherein L and R9 are as defined above), a -L-CN group (wherein L is as defined above), a -L-S(O)n-R1 group (wherein L and R1 are as defined above, and n is an integer of from 0 to 2), a -L-S-L-O-R9 group (wherein L and R9 are as defined above), a -L-O-COR9 group (wherein L and R9 are as defined above), a -L-O-SO₂R9 group (wherein L and R9 are as defined above), a -L-COOR8 group (wherein L and R8 are as defined above), a -CH = CHOR8 group (wherein R8 is as defined above) or a -L-O-L-CN group (wherein L is as defined above); Z is a halogen atom, a nitro group, an alkoxy group having from 1 to 3 carbon atoms, a trifluoromethyl group, a cyano group or a -S(O)_nR10 group (wherein R10 is an alkyl group having from 1 to 3 carbon atoms or a haloalkyl group having from 1 to 3 carbon atoms, and n is an integer of from 0 to 2); V is a hydrogen atom, a halogen atom, an alkyl group having from 1 to 4 carbon atoms or an alkoxy group having from 1 to 4 carbon atoms; W is a hydrogen atom, a halogen atom, an alkyl group having from 1 to 4 carbon atoms, a haloalkyl group having from 1 to 4 carbon atoms, an alkoxy group having from 1 to 4 carbon atoms, an alkoxyalkyl group having from 2 to 6 carbon atoms, an alkoxycarbonyl group having from 2 to 5 carbon atoms, a haloalkoxy group having from 1 to 3 carbon atoms, a nitro group, a cyano group or a -S(O)n-R group (wherein n is as defined above and R is an alkyl group having from 1 to 4 carbon atoms); Q is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms which may be substituted by halogen, an alkenyl group having from 1 to 6 carbon atoms which may be substituted by halogen, an alkynyl group having from 1 to 6 carbon atoms which may be substituted by halogen, a cyanomethyl group, a -C(O)-R11 group (wherein R11 is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of alkyl having from 1 to 6 carbon atoms, alkenyl having from 1 to 6 carbon atoms, alkynyl having from 1 to 6 carbon atoms, haloalkyl having from 1 to 6 carbon atoms, haloalkenyl having from 1 to 6 carbon atoms, haloalkynyl having from 1 to 6 carbon atoms, halogen, nitro and trifluoromethyl, an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms or a hydroxyl group), a -S(O)2R11 group (wherein R11 is as defined above), a -P(O)(OR11)₂ group (wherein R11 is as defined above), a -L-C(O)-R11 group (wherein L and R11 are as defined above), a -L-C(O)-N(R12)(R13) (wherein L is as defined above, each of R12 and R13 is a hydrogen atom or an alkyl group having from 1 to 6 carbon atoms), a -L-R14 group (wherein L is as defined above, R14 is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of halogen, nitro and trifluoromethyl, an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms or a hydroxy group), a -L-N(R12)(R13) group (wherein L, R12 and R13 are as defined above), a -L-OR15 group (wherein R15 is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an alkenyl group having from 1 to 6 carbon atoms), a -L-OC(O)R16 group (wherein R16 is an alkyl group having from 1 to 6 carbon atoms or an alkoxy group having from 1 to 6 carbon atoms), a -L-S(O),R15 group (wherein R15 is as defined above, and n is an integer of 0 or 2), a -L-SC(0)R12 group (wherein R12 is as defined above).

(wherein each of L1 and L2 is a methylene group, an oxygen atom or a sulfur atom, R16 is a hydrogen atom or an alkyl group having from 1 to 3 carbon atoms, and n is an integer of 2 or 3), and a salt thereof.

2. The pyrazole derivative according to Claim 1, wherein A, B, X, Y, Z and Q in the formula I are respectively selected from the following substituents:

A : Me, Et, n-Pr, i-Pr, $CH_2CH = CH_2$, $CH_2C = CH$

B: H, Me, Et, n-Pr, i-Pr, C1, Br, CH₂C1, CF₃, OMe, OEt, OPr-i, SMe, CH₂OMe, CH₂SMe, CO₂Me, CO₂Et X: Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, s-Bu, t-Bu, OMe, OEt, OPr-n, OPr-i, OBu-n, OBu-i, OBu-s, OBu-t, F, C1, Br, I, NO₂, CN, CH₂F, CHF₂, CH₂CF₃, CH₂CF₃, CH₂C1, CC1₃, CHC1Me, CH₂CH₂C1, CHC1CH₂C1, CH₂Br, CHBrMe, CH₂CH₂Br, CH₂OMe, CH₂OEt, CH₂OPr-n, CH₂OPr-i, CH₂OBu-n, CH₂OBu-i, CH₂OBu-s, CH₂OBu-t, CHMeOMe, CHMeOEt, CHMeOPr-n, CHMeOPr-i, CHMeOBu-n, CHMeOBu-i, CHMeOBu-s, CHMeOBu-t, CH₂CH₂OMe, CH₂CH₂OEt, CH₂CH₂OPr-i, Ac, COEt, COPr-n, COPr-i, COOMe, COOEt, COOPr-i, CONHMe, CONHEt, CONMe₂, CONEtMe, OCHF₂, OCF₃, OCH₂CF₃, SMe, SEt, CH₂SMe, CH₂SEt, CHMeSMe,

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CHMeSEt

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Y: CH₂OH, CH₂OMe, CH₂OEt, CH₂OPr-n, CH₂OPr-i, CH₂OBu-n, CH₂OBu-i, CH₂OBu-s, CH₂OBu-t, CH₂OAm-n, CH₂OAm-i, CH₂OAM-t,

$$CH_2OCH_2 \longrightarrow CH_2OCH = CH_2,$$

CH2OCH2CC1 = CH2, CH2OCH2CC1 = CHC1, CH2OCH2CH2OMe, CH2OCH2CH2OEt, CH2OCH2CH2OPr-i,

CH₂O
$$\bigcirc$$
 , CH₂O \bigcirc , CH₂

CH₂OPh, CH₂OPH-C1-4, CH₂OPh-NO₂-4, CH₂NHMe, CH₂NHEt, CH₂NMe₂, CH₂NEt₂, CH₂NEtMe, CH₂OCH₂Ph. CH₂OCH₂COOMe, CH₂OCH₂COOEt, CH₂OCHMeCOOMe, CH₂OCH₂COOBu-t, CH₂OCHMeCOOEt, CH₂CN, CH₂SMe, CH₂SEt, CH₂SPr-i, CH₂SBn-t, CH₂SCH₂CH = CH₂, CH₂SCH₂C≡CH,

CH₂SCH₂CH₂C1, CH₂SOMe, CH₂SOEt, CH₂SO₂Me, CH₂SO₂Et, CH₂SO₂Pr-n, CH₂SO₂Pr-i, CH₂SCH₂CH₂OMe, CH₂SCH₂CH₂OEt, CH₂OAc, CH₂OCOEt, CH₂OCOPr-i, CH₂OSO₂Me, CH₂OSO₂Et, CH₂OCH₂CH₂CN, CHMeOH, CHMeOMe, CHMeOEt, CHMeOPr-n, CHMeOPr-i, CHMeOBu-n, CHMeOBu-i, CHMeOBu-s, CHMeOBu-t,

CHMeOCH = CH_2 , $CHMeOCH_2CH = CH_2$, $CHMeOCH_2C=CH$, $CHMeOCH_2CF_3$, $CHMeOCH_2CF_3$, $CHMeOCH_2CH_2CI$, $CHMeOCH_2CI$,

$$\begin{array}{c|c} & & & & \\ \hline & & & \\ \text{CHMeOCH}_{z} & & & \\ \hline \end{array} \begin{array}{c} & & \text{C} & \mathcal{Z} \\ \\ & & & \\ \end{array}$$

CHMeOCH₂CH₂OMe, CHMeOCH₂CH₂Et,

CHMeOPh, CHMeNHMe, CHMeNMe₂, CHMeNEt₂, CHMeOCH₂COOMe, CHMeOCH₂COOEt, CHMeOCH-MeCOOMe, CHMeCN, CHMeSMe, CHMeSEt, CHMeSPr-n, CHMeSPr-i, CHMeSCH₂CH = CH₂, CHMeSCH₂C=CH,

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 $\label{eq:chmesoh} CHMeSOH_2CH_2Ct, CHMeSOMe, CHMeSOEt, CHMeSO_2Me, CHMeSO_2Et, CHMeSO_2Pr-i, CHMeSCH_2CH_2OMe, CHMeSPh, CHMeOAc, CHMeOCOEt, CHMeOSO_2Me, CHMeOSO_2Et, CHMeOCH_2CH_2CN, CMe_2OH, CMe_2OMe, CMe_2OEt, CMe_2OPr-n, CMe_2OPr-i, CMe_2OCH = GH_2, CMe_2OCH_2C=CH, CMe_2OCH_2CH_2Ct, \\$

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CMe₂OCH₂COOMe, CMe₂CN, CMe₂SMe, CMe₂SEt, CMe₂SO₂Me, CMe₂SO₂Et, CMe₂OAC, CMe₂OSO₂Me, CH₂COOMe, CH₂COOEt, CH₂COOPr-i, CHMeCOOMe, CHMeCOOEt, CHMeCOOPr-i, CH₂CH₂COOMe, CH₂CH₂COOEt, CH₂CH₂COOPr-i, CH = CHOMe, CH = CHOEt, CH = CHOPr-i, COOH, COOMe, COOEt, COOPr-n, COOPr-i, COOBu-s, COOBu-i, COOBu-t, COOAm-i,

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55 COOCH₂CH = CH₂, COOCH₂C=CH, COOCH₂CMe = CH₂, COOCH₂CH₂Br, COOCH₂CH₂Ct COOCH₂CH₂F, COOCH₂CCt₃, COOCH₂CH₅C, COOCH₅CH₅C, COOCH₅C, CO

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COOCH2CC! = CH2, COOCH2CC! = CHC!, COOCH2OMe, COOCH2CH2OMe, COOCH2CH2OEt, COOCH3OEt, COOCH, CH, SMe, COOCH2CH2SEt, COOCH2CH2SCH2CH2Ct. COOCH₂SMe, COOCH₂SOMe, COOCH2CH2OCH2CH2C1, COOCH2CH2SOMe, COOCH₂CH₂OCH₂CH₂Br, COOCH2CH2OSO2Me, COOCH₂CH₂OSO₂Ph-Me-4, COOCH2OCH2CH2OMe, COOCH2CH2SO2Me, COOCH2CH2SO2Et, COOCH2SO2Me, COOCH2CN, COOCH2CH2CN, COOCH2CH2CH2CN, COOCH2CH2NHMe, COOCH2CH2NMe2, COOCH2NMe2, COOCH2CH2NO2, COOCH2CH2CH2NO2, COOCH2OH,

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COOCH₂COMe, COOCH₂COBu-t, COOCH₂COPr-i, COOCH₂COPh, COOCH₂COOMe, COOCH₂COOEt, COOCHMeCOOMe, COOCH₂COMe, COOCH₂CH₂OCH₂CH = CH₂, COOCH₂CH₂OCH₂C=CH, COOCH₂CH₂OPh, COOCH₂CH₂OCH₂Ph, COOCH₂SiMe₃, COOSiMe₃, COOSiEt₃, COOPh, COOPh-Ct-4, COOPh-Me-4, COOPh-NO₂-4, COOCH₂Ph, COOCH₂Ph-Ct-2, COOCH₂Ph-Ct-4, COOCHMePh, COOCH₂CH₂Ph,

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c00 \(\int \)0

COOCH₂

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C(O)SMe, C(O)SPr-i, C(O)SPr-n, C(O)SBu-n, C(O)SBu-t, C(O)SBu-s, C(O)SBu-i, C(S)OMe, C(S)OEt, C(S)OPr-i, C(S)OPr-n, C(S)OBu-n, C(S)OBu-t, C(S)OBu-s, C(S)OBu-i, CSSMe, CSSEt, CSSPr-n, CSSPr-i, CONMe₂, CONHMe, CONEt₂, CONHEt, CONHPr-n, CONHPr-i, CONHBu-t, CONHBu-s, CONHBu-i, CONHBu-n, CQNHAm-t, CONPr₂-i, CONPr₂-n, CONHPh, CONHPh-Me-4, CONHPh-NO₂-4,

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CON

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CONMeOMe, CONHCH₂CH = CH₂, CON(CH₂CH = CH₂)₂, CONHCH₂C=CH, CON(CH₂C=CH)₂, CONMePh,

CONEtPh, CON(Me)Ph-Me-4, CONHSO₂Me, CONHSO₂CF₁, COON = CMe₂,

$$COON = \bigcirc$$
, $COON = \bigcirc$,

COOCH2OCOMe, COOCH2OCOBu-t.

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Z: F. Ct. Br. 1. NO₂. OMe. OEt. OPr-n. OPr-i. CF₃. CN. SMe. SOMe. SO₂Me. SCF₃. SO₂CF₃. Q: H. Me. Et. n-Pr. i-Pr. n-Bu. i-Bu. s-Bu. t-Bu. CH₂CH₂Ct. CH₂CF₃. CHCtMe. CH₂CH₃Br. CHCtCH₂Ct. CH₂CH = CH₂. CH₂CMe = CH₂. CH₂CH = CHMe. CH₂C=CH. CH₂CCt = CH₂. CH₂CN. CH₂Ph. CH₂Ph-Ct-2, CH₂Ph-Ct-3, CH₂Ph-Me-2,

CH₂Ph-Me₂-2,4, CH₂Ph-Me-4, CHMePh, CHEtPh, CH₂Ph-NO₂-2, CH₂Ph-CF₃-3, CH₂OMe, CH₂OEt, CH₂OH, CHMeOH, CH₂NHMe, CH₂NMe₂, CHMeNMe₂, CH₂COPh, CH₂COPh-NO₂-4, CH₂COPh-Me-4, CH₂COPh-C1-4, CH₂COPh-Me₂-2,4, CH₂COPh-CF₃-4, CH₂COEt, CHMeAC, CH₂CO₂Me, CH₃CO₂Et, CH₂CO₂Pr-n, CH₂CO₂Pr-i, CH₂CO₂Bu-t, CH₂CO₂H, CHMeCO₂H, CH₂CONHMe, CH₃CONMe₂, CH₂CONHEt, CH₂CONEt₂, CH₂CONPr-n₂, CH₂OCO₂Bu-t, CH₂OAC, CH₂COEt, CH₂COPr-i, CH₂COBu-t, CH₂OCO₂Me, CH₂OCO₂Et, CH₂OCO₂Pr-i, CH₂OCO₂Bu-t, CH₂SMe, CH₂SEt, CH₂SCH₂CH = CH₂, CH₂SAC, CH₂SCOBu-t, CH₂SO₂Me, CH₂SO₂CEt, CH₂SO₂CH₂CH = CH₂, CH₂NHCO+CEt, CH₂NHCO+CEt, CH₂NHCO+CEt, CH₂NHCO₂Me, CH₂NHCO₂Et, CH₂NHCO₂Me, COPh, COPh-Me-4, COPh-NO₂-2, COPh-C1₂-2,4, AC, COEt, COPr-n, COPr-i, COBu-n, COBu-t, COCH₂C1, COCHC1₂, COCCC1₃, COCF₃, COCH₂OMe, COCH₂OPh, COCH₂CH = CHCH₃, CO₂Me, CO₂Et, CO₂Bu-t, CO₂Pr-i, CONHMe, CONMe₂, CONHEt, CONEt₂, CONPr-n₂, CON(CH₂CH = CHCH₃), CONMePh,

 CO_2CH_2Ph , CO_2Ph , SO_2Me , SO_2Et , $SO_2CH_2CH=CH_2$, SO_2Ph , SO_2Ph -Me-4, SO_2Ph -C1-4, SO_2Ph -(NO₂)₂-2,4, SO_2CF_3 , $P(=O)(OMe)_2$, $P(=O)(OEt)_2$, $P(=O)(OPr-n)_2$, $P(=O)(OPr-i)_2$, $P(=S)(OMe)_2$, $P(=S)(OEt)_2$, $P(=O)(OMe)_2$, $P(=O)(OCH_2CH=CH_2)_2$

3. The pyrazole derivative according to Claim 1, wherein V and W are hydrogen atoms, and A, B, X, Y, Z and Q in the formula I are respectively selected from the following substituents:

A: Me, Et, n-Pr, i-Pr, CH2CH = CH2, CH2C=CH

B : H, Me,

X: Me, Et, i-Pr, OMe, OEt, OPr-i F, C1, Br, I, NO2, CN, OBu-t, CF3 CH2OMe, Ac, COOMe, COOEt, COOPr-i, OCH52, OCF3, OCH2CF3, SMe, CH2SMe,

Z: F, Ct, Br, I, NO2, OMe, CF3, CN, SMe, SOMe, SO2Me, SCF3, SOCF3, SO2CF3

Q: H, -CH₂Ph, CH₂COPh, SO₂(4-Me-phenyl) CH₂OC(O)Bu-t, CH₂COMe, CH₂OMe, CH₂CO(4-Me-phenyl), CH₂COOH

4. The pyrazole derivative according to Claim 1, wherein V and W are hydrogen atoms, and A, B, X, Y, Z and Q in the formula I are respectively selected from the following substituents:

A : Me, Et, n-Pr, i-Pr, $CH_2CH = CH_2$, $CH_2C = CH$

B: H, Me,

X: Me, Et, i-Pr, OMe, OEt, OPr-i F, Ct, Br, I, NO₂, CN, OBu-t, CF₃, CH₂OMe, Ac, COOMe, COOEt, COOPr-i, OCHF₂, OCF₃, OCH₂CF₃, SMe, CH₂SMe,

Y: COOMe, COOEt, COOPr-n, COOPr-i, COOBu-t, COOAm-i, COOCH2CH=CH2, COOCH2C=CH, COOCH2CH2CL2 COOCH2CF3, COOCH2CH2OMe, COOCH2CH2CN COOCH2COOMe, COOCH2COOEt, COOCH2COOPr-i, COOCH2COOBu-t, CONME2, COON=CM22, CH2COOMe, CH2COOEt, CH2CH2COOMe, CH2CH2COOEt, CH2CH2COOEt, CH2CH2COOEt, CH2CH2COOEt, CH2CH2COOMe, CH2CH2COOEt, C

Z: F, C1, Br, I, NO2, OMe, CF3, CN, SMe, SOMe, SO2Me, SCF3, SOCF3, SO2CF3

Q: H, -CH₂Ph, CH₂COPh, SO₂(4-Me-Phenyl) CH₂OC(O)Bu-t, CH₂COMe, CH₂OMe, CH₂CO(4-Me-Phenyl), CH₂COOH

5. The pyrazole derivative according to Claim 1, which has the formula:

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wherein A is an alkyl group having from 1 to 3 carbon atoms; B is a hydrogen atom or a methyl group; X is an alkyl group having from 1 to 3 carbon atoms, an alkoxy group having from 1 to 3 carbon atoms or a halogen atom; Y is an alkoxycarbonyl group having from 1 to 3 carbon atoms, a -CH₂-O-R group (wherein R is an alkyl group having from 1 to 3 carbon atoms) or a -CH(CH₂)-O-R group (wherein R is as defined above); Z is a -S(O)_nCH₂ group (wherein n is an integer of from 0 to 2); V and W are hydrogen atoms; and Q is a hydrogen atom, a benzyl group, a phenacyl group or a tosyl group, and a salt thereof.

6. The pyrazole derivative according to Claim 1, which is 5-hydroxy-4-(4-methanesulfonyl-3-methoxymethyl-2-methylbenzoyl)-1-methylpyrazole, 1-ethyl-5-hydroxy-4-(4-methanesulfonyl-3-methoxymethyl-2-methylbenzoyl)pyrazole, 5-hydroxy-1-isopropyl-4-(4-methanesulfonyl-3-methoxymethyl-2-methylbenzoyl)pyrazole, 5-hydroxy-4-(4-methanesulfonyl-3-methoxycarbonyl-2-methylbenzoyl)-1-methylpyrazole, 1-ethyl-5-hydroxy-4-(4-methanesulfonyl-3-methoxycarbonyl-2-methylbenzoyl)pyrazole, 4-(3-ethoxycarbonyl-4-methanesulfonyl-2-methylbenzoyl)-5-hydroxy-1-methylpyrazole, 4-(3-ethoxycarbonyl-4-methanesulfonyl-2-methylbenzoyl)-1-methylpyrazole, 5-hydroxy-4-(3-isopropoxycarbonyl-4-methanesulfonyl-2-methylbenzoyl)-1-methylpyrazole, 1-ethyl-5-hydroxy-4-(3-isopropoxycarbonyl-4-methanesulfonyl-2-methylbenzoyl)pyrazole,

4-(2,4-dichloro-3-methoxycarbonylbenzoyl)-5-hydroxy-1-methylpyrazole,
4-(3-ethoxymethyl-4-methanesulfonyl-2-methylbenzoyl)-5-hydroxy-1-methylpyrazole,
4-(3-ethoxymethyl-4-methanesulfonyl-2-methylbenzoyl)-1-ethyl-5-hydroxypyrazole,
4-(3-ethoxymethyl-4-methanesulfonyl-2-methylbenzoyl)-5-hydroxy-1-isopropylpyrazole,

1,3-dimethyl-4-(3-ethoxymethyl-4-methanesulfonyl-2-methylbenzoyl)-5-hydroxypyrazole, 5-hydroxy-4-[4-methanesulfonyl-3-(1-methoxyethyl)-2-methylbenzoyl]-1-methylpyrazole, 1-ethyl-5-hydroxy-4-[4-methanesulfonyl-3-(1-methoxyethyl)-2-methylbenzoyl]pyrazole, 4-(2-chloro-4-methanesulfonyl-3-methoxymethylbenzoyl)-5-hydroxy-1-methylpyrazole, 4-(2-chloro-4-methanesulfonyl-1-methoxymethylbenzoyl)-1-ethyl-5-hydroxypyrazole,

4-(2-chloro-4-methanesulfonyl-1-methoxymethylbenzoyl)-5-hydroxy-1-isopropylpyrazole,
1-ethyl-5-hydroxy-4-(3-isopropoxymethyl-4-methanesulfonyl-2-methylbenzoyl)pyrazole,
5-hydroxy-4-[4-methanesulfonyl-3-(2-methoxyethyl)oxycarbonyl-2-methylbenzoyl]-1-methylpyrazole,
1-ethyl-5-hydroxy-4-[4-methanesulfonyl-3-(2-methoxyethyl)oxycarbonyl-2-methylbenzoyl]pyrazole,

- 4-[2-chloro-4-methanesulfonyl-3-(2-methoxyethyl)oxymethylbenzoyl)-5-hydroxy-1-methylpyrazole,
- 4-(2-chloro-3-ethylthiomethyl-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole,
- 4-(2-chloro-3-ethanesulfinyl-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole,
- 4-(2-chloro-3-ethanesulfonyl-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole,
- 1-ethyl-5-hydroxy-4-(3-n-propoxycarbonyl-4-methanesulfonyl-2-methylbenzoyl)pyrazole,
 - 4-(2-chloro-4-methanesulfonyl-3-methoxycarbonylbenzoyl)-5-hydroxy-1-methylpyrazole,
 - 4-(2-chloro-4-methanesulfonyi-3-methoxycarbonylbenzoyi)-1-ethyi-5-hydroxypyrazole,
 - 4-(2-chloro-4-methanesulfonyl-3-methoxycarbonylbenzoyl)-5-hydroxy-1-isopropylpyrazole,
 - 4-[2-chloro-4-methanesulfonyl-3-(3-propargyl)oxymethylbenzoyl]-1-ethyl-5-hydroxypyrazole,
- 5-hydroxy-4-(4-methanesulfonyl-2-methoxy-3-methoxycarbonylbenzoyl)-1-methylpyrazole,
 - 4-(2-chloro-4-methanesulfonyl-3-isopropoxycarbonylbenzoyl)-5-hydroxy-1-methylpyrazole,
 - 4-(2-chloro-4-methanesulfonyl-3-isopropoxycarbonylbenzoyl)-1-ethyl-5-hydroxypyrazole,
 - 4-[2-chloro-4-methanesulfonyl-3-(2.2.2-trifluoroethyl)oxymethylbenzoyl]-5-hydroxy-1-methylpyrazole,
 - 5-hydroxy-1-isopropyl-4-(4-methanesulfonyl-3-methoxycarbonyl-2-methylbenzoyl)pyrazole,
- 5 5-hydroxy-4-(4-methanesulfonyl-2-methoxy-3-methoxymethylbenzoyl)-1-methylpyrazole,
 - 4-[3-(2-chloroethyl)oxycarbonyl-4-methanesulfonyl-2-methylbenzoyl]-1-ethyl-5-hydroxypyrazole,
 - 1-ethyl-5-hydroxy-4-(4-methanesulfonyl-2-methoxy-3-methoxycarbonylbenzoyl)pyrazole,
 - 4-(2.4-dichloro-3-methoxycarbonylbenzoyl)-1-ethyl-5-hydroxypyrazole.
 - 4-(2.4-dichloro-3-methoxycarbonylbenzoyl)-5-hydroxy-1-isopropylpyrazole,
- 4-(2-chloro-3-cyanomethyl-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole,
 - 4-(2-chloro-3-hydroxymethyl-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole,
 - 4-(2.4-dichloro-3-methoxymethylbenzoyl)-1-ethyl-5-hydroxypyrazole,
 - 4-(2.4-dichloro-3-methoxymethylbenzoyl)-5-hydroxy-1-methylpyrazole,
 - 4-[2-chloro-4-methanesulfonyl-3-(2-methoxyvinyl)benzoyl]-1-ethyl-5-hydroxypyrazole,
 - 5-benzyloxy-4-(2,4-dichloro-3-methoxycarbonylbenzoyl)-1-ethylpyrazole,
 - 5-benzyloxy-4-(2,4-dichloro-3-methoxycarbonylbenzoyl)-1-isopropylpyrazole,
 - 4-(2-chloro-3-ethoxycarbonyl-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole,
 - 4-(2-chloro-3-ethoxycarbonyl-4-methanesulfonylbenzoyl)-5-hydroxy-1-isopropylpyrazole or
 - 4-(2-chloro-3-ethoxycarbonyl-4-methanesulfonylbenzoyl)-5-hydroxy-1-methylpyrazole.
 - 7. A selective herbicidal composition comprising a herbicidally effective amount of a pyrazole derivative of the formula I as defined in Claim 1 or its salt and an agricultural carrier or diluent.
 - 8. A method for controlling weeds, which comprises applying a herbicidally effective amount of a pyrazole derivative of the formula I as defined in Claim 1 or its salt to a locus to be protected.
 - 9. A process for producing a pyrazole derivative having the formula:

wherein A is an alkyl group having from 1 to 3 carbon atoms, an alkenyl group having from 2 to 4 carbon atoms or an alkynyl group having from 2 to 4 carbon atoms; B is a hydrogen atom, an alkyl group having from 1 to 3 carbon atoms, an alkoxy group having from 1 to 3 carbon atoms, an alkoxyalkyl group having from 1 to 3 carbon atoms, an alkoxyalkyl group having from 2 to 4 carbon atoms, an alkylthioalkyl group having from 2 to 4 carbon atoms or an alkoxycarbonyl group having from 2 to 4 carbon atoms; X is an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms, a halogen atom, a nitro group, a cyano group, a haloalkyl group having from 1 to 6 carbon atoms, an alkoxyalkyl group having from 2 to 6 carbon atoms, an alkylcarbonyl group having from 2 to 6 carbon atoms, an alkoxycarbonyl group having from 2 to 6 carbon atoms, an alkoxycarbonyl group having from 1 to 6 carbon atoms, an alkoxycarbonyl group having from 1 to 6 carbon atoms, an alkoxycarbonyl group having from 1 to 6 carbon atoms, an alkoxycarbonyl group having from 1 to 6 carbon atoms, an alkoxycarbonyl group having from 1 to 6 carbon atoms, an alkylcarbonyl group substituted independently by hydrogen or alkyl having from 1 to 6 carbon

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atoms, a haloalkoxy group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms or an alkylthioalkyl group having from 2 to 6 carbon atoms; Y is a -COOR1 group (wherein R1 is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 3 to 8 carbon atoms, a cycloalkylalkyl group having from 4 to 8 carbon atoms, an alkynyl group having from 3 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, a haloalkyl group having from 1 to 6 carbon atoms, a halocycloalkyl group having from 3 to 8 carbon atoms, a haloalkynyl group having from 3 to 6 carbon atoms, a haloalkenyl group having from 2 to 6 carbon atoms or a phenyl group which may be substituted by alkyl having from 1 to 3 carbon atoms, halogen, nitro or alkoxy having from 1 to 3 carbon atoms), a -COO-L-OR1 group (wherein L is an alkylene group having from 1 to 6 carbon atoms which may be substituted by alkyl having from 1 to 3 carbon atoms, and R1 is as defined above), a -COO-L-R2 group (wherein L is as defined above, and R2 is a phenyl group which may be substituted by alkyl having from 1 to 3 carbon atoms, halogen, nitro or alkoxy having from 1 to 3 carbon atoms), a -COO-M group (wherein M is a 3 to 6-membered alicyclic residue containing not more than 2 sulfur or oxygen atoms and formed by a linkage of from 1 to 4 carbon atoms), a -COO-L-M group (wherein L and M are as defined above), a -COO-L-O-L-R2 group (wherein L and R2 are as defined above), a -COO-L-S(O)n-R1 group (wherein L and R1 are as defined above, and n is an integer of from 0 to 2), a -CON(R3)(R4) group (wherein each of R3 and R4 is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 3 to 8 carbon atoms, a cycloalkylalkyl group having from 4 to 8 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms, an alkynyl group having from 2 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, a haloalkyl group having from 1 to 6 carbon atoms, a halocycloalkyl group having from 3 to 8 carbon atoms, a haloalkynyl group having from 2 to 6 carbon atoms, a haloalkenyl group having from 2 to 6 carbon atoms or a phenyl group which may be substituted by alkyl having from 1 to 3 carbon atoms, halogen, nitro or alkoxy having from 1 to 3 carbon atoms), a

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group (wherein n is an integer of from 4 to 6), a

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group (wherein R5 is an alkyl group having from 1 to 3 carbon atoms), a

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group, a -CONHSO₂CH₃ group, a -CONHSO₂CF₃ group, a -COO-L-N(R3)(R4) group (wherein L, R3 and R4 are as defined above), a -COO-L-CO-R1 group (wherein L and R1 are as defined above), a -COO-L-CN group (wherein L is as defined above), a -COO-L-NO₂ group (wherein L is as defined above), a -COO-L-NO₂ group (wherein L is as defined above), a -COO-N=C(R6)(R7) group (wherein each of R6 and R7 which may be the same or different is an alkyl group having from 1 to 3 carbon atoms), a

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group (wherein n is an integer of from 4 to 6), a -COO-L-O-SO₂-R1 group (wherein L and R1 are as defined above), a -COO-L-O-CO-R1 group (wherein L and R1 are as defined above), a -COO-L-O-L-O-R1 group (wherein L and R1 are as defined above), a -COO-L-Si(R5)₂ group (wherein L and R5 are as defined above), a -C(O)S-R1 group (wherein R1 is as defined above), a -C(S)O-R1 group (wherein R1 is as defined above), a -L-O-R1 group (wherein L and R1 are as defined

above), a -L-O-L-O-R8 group (wherein L is as defined above, and R8 is a hydrogen atom or an alkyl group having from 1 to 6 carbon atoms), a -L-O-M group (wherein L and M are as defined above), a -L-O-L-M group (wherein L and M are as defined above), a -L-NR8R9 group (wherein R8 is as defined above, and R9 is an alkyl group having from 1 to 6 carbon atoms), a -L-O-CH₂Ph group (wherein L is as defined above), -L-O-L-COOR9 group (wherein L and R9 are as defined above), a -L-CN group (wherein L is as defined above), a -L-S(O)n-R1 group (wherein L and R1 are as defined above, and n is an integer of from 0 to 2), a -L-S-L-O-R9 group (wherein L and R9 are as defined above), a -L-O-COR9 group (wherein L and R9 are as defined above), a -L-O-SO₂R9 group (wherein L and R9 are as defined above), a -L-COOR8 group (wherein L and R8 sre as defined above), a -CH = CHOR8 group (wherein R8 is as defined above) or a -L-O-L-CN group (wherein L is as defined above); Z is a halogen atom, a nitro group, an alkoxy group having from 1 to 3 carbon atoms, a trifluoromethyl group, a cyano group or a -S(0), R10 group (wherein R10 is an alkyl group having from 1 to 3 carbon atoms or a haloalkyl group having from 1 to 3 carbon atoms, and n is an integer of from 0 to 2); V is a hydrogen atom, a halogen atom, an alkyl group having from 1 to 4 carbon atoms or an alkoxy group having from 1 to 4 carbon atoms; W is a hydrogen atom, a halogen atom, an alkyl group having from 1 to 4 carbon atoms, a haloalkyl group having from 1 to 4 carbon atoms, an alkoxy group having from 1 to 4 carbon atoms, an alkoxyalkyl group having from 2 to 6 carbon atoms, an alkoxycarbonyl group having from 2 to 5 carbon atoms, a haloalkoxy group having from 1 to 3 carbon atoms, a nitro group, a cyano group or a -S(O)_n-R group (wherein n is as defined above and R is an alkyl group having from 1 to 4 carbon atoms); Q is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms which may be substituted by halogen, an alkenyl group having from 1 to 6 carbon atoms which may be substituted by halogen, an alkynyl group having from 1 to 6 carbon atoms which may be substituted by halogen, a cyanomethyl group, a -C(O)-R11 group (wherein R11 is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of alkyl having from 1 to 6 carbon atoms, alkenyl having from 1 to 6 carbon atoms, alkynyl having from 1 to 6 carbon atoms, haloalkyl having from 1 to 6 carbon atoms, haloalkenyl having from 1 to 6 carbon atoms, haloalkynyl having from 1 to 6 carbon atoms, halogen, nitro and trifluoromethyl, an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms or a hydroxyl group), a -S(O)₂R11 group (wherein R11 is as defined above), a -P(O)(OR11)₂ group (wherein R11 is as defined above), a -L-C(O)-R11 group (wherein L and R11 are as defined above), a -L-C(0)-N(R12)(R13) (wherein L is as defined above, each of R12 and R13 is a hydrogen atom or an alkyl group having from 1 to 6 carbon atoms), a -L-R14 group (wherein L is as defined above, R14 is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of halogen, nitro and trifluoromethyl, an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms or a hydroxy group), a -L-N(R12)(R13) group (wherein L, R12 and R13 are as defined above), a -L-OR15 group (wherein R15 is a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an alkenyl group having from 1 to 6 carbon atoms), a -L-OC(O)R16 group (wherein R16 is an alkyl group having from 1 to 6 carbon atoms or an alkoxy group having from 1 to 6 carbon atoms), a -L-S(O),R15 group (wherein R15 is as defined above, and n is an integer of 0 or 2), a -L-SC(O)R12 group (wherein R12 is as defined above),

(wherein each of L1 and L2 is a methylene group, an oxygen atom or a sulfur atom, R16 is a hydrogen atom or an alkyl group having from 1 to 3 carbon atoms, and n is an integer of 2 or 3), and a salt thereof, which comprises:

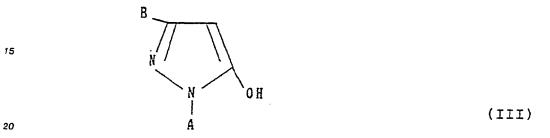
(a) reacting a benzoic acid of the formula:

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wherein X, Y, Z, V and W are as defined above, with a 5-hydroxypyrazole of the formula:



wherein A and B are as defined above, to obtain a compound of the formula I wherein Q is a hydrogen atom;

(b) rearranging a compound of the formula:

wherein A, B, X, Y, Z, V and W are as defined above, to obtain a compound of the formula I wherein Q is a hydrogen atom;

(c) condensing a 4-benzoyl-5-hydroxypyrazole of the formula:

wherein A, B, X, Y, Z, V and W are as defined above, with a condensing agent of the formula E-Q' wherein E is a halogen atom, a methanesulfonic acid group or a p-toluenesulfonic acid group and Q' is Q as defined above other than a hydrogen atom, to obtain a compound of the formula I wherein Q is as defined above other than a hydrogen atom; or

(d) condensing a 4-benzoyl-5-chloropyrazole of the formula:

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(VI)

wherein A, B, X, Y, Z, V and W are as defined above, with a condensing agent of the formula HOQ wherein Q is as defined above, to obtain a compound of the formula I.

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Pyrazole derivative and herbicide containing it.

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1. A pyrazole derivative having the formula:

EP 0 282 944 A3

wherein A is alkyl, alkenyl or alkynyl; B is hydrogen, alkyl, halogen, haloalkyl, alkoxy, alkylthio, alkoxyalkyl, alkylthioalkyl or alkoxycarbonyl; X is alkyl, alkoxy, halogen, nitro, cyano, haloalkyl, alkoxyalkyl, alkylcarbonyl, alkoxycarbonyl, aminocarbonyl substituted by hydrogen or alkyl, haloalkoxy, alkylthio or alkylthioalkyl; Y is -COOR1 (wherein R1 is hydrogen, alkyl, etc.), -COO-L-OR1 (wherein L is alkylene which may be substituted), -COO-L-R2 (wherein R2 is phenyl group which may be substituted), -COO-M (wherein M is 3 to 6-membered alicyclic residue containing not more than 2 sulfur or oxygen atoms), -COO-L-M, -COO-L-O-L-R2, -COO-L-S-(O)_n-R1, -CON(R3)(R4) (wherein each of R3 and R4 is hydrogen, alkyl etc.), a

(wherein R5 is alkyl),

-CONHSO $_2$ CH $_3$, -CONHSO $_2$ CF $_3$, -COO-L-N(R3)(R4), -COO-L-CO-R1, -COO-L-CO-R1, -COO-L-CN, -COO-L-NO $_2$, -COOSi(R5) $_3$, -COO-N = C(R6)(R7) (wherein each of R6 and R7 is alkyl),

-COO-L-O-SO₂-R1, -COO-L-O-CO-R1, -COO-L-O-L-O-R1, -COO-L-Si(R5)₃, -C(O)S-R1, -C(S)O-R1, -C(S)S-R1, -L-O-R1, -L-O-R8 (wherein R8 is hydrogen or alkyl), -L-O-M, -L-O-L-M, -L-NR8R9 (wherein R9 is alkyl group), -L-O-CH₂Ph, -L-O-L-COOR9, -L-CN, -L-S(O)_n-R1, -L-S-L-O-R9, -L-O-COR9, -L-O-SO₂R9, -L-COOR8, -C=CHOR8 or -L-O-L-CN; Z is halogen, nitro, alkoxy, trifluoromethyl, cyano or -S(O)_nR10 (wherein R10 is alkyl or haloalkyl); V is a hydrogen atom, a halogen atom, an alkyl group having from 1 to 4 carbon atoms or an alkoxy group having from 1 to 4 carbon atoms, a haloalkyl group having from 1 to 4 carbon atoms, a haloalkyl group having from 1 to 4 carbon atoms, an alkoxyalkyl group having from 2 to 6 carbon atoms, an alkoxycarbonyl group having from 2 to 5 carbon atoms, a haloalkoxy group having from 1 to 3 carbon atoms, a nitro group, a cyano group or a -S(O)_n-R group (wherein n is as defined above and R is an alkyl group having from 1 to 4 carbon group which

EP 0 282 944 A3

may be substituted, alkyl, alkoxy or hydroxyl), $-S(O)_2R11$, $-P(O)(OR11)_2$, -L-C(O)-R11, -L-C(O)-N(R12)(R13) (wherein each of R12 and R13 is hydrogen or alkyl), -L-R14 (wherein R14 is phenyl which may be substituted, alkyl, alkoxy or hydroxy), -L-N(R12)(R13), a -L-OR15 (wherein R15 is hydrogen, alkyl or alkenyl), -L-OC(O)R16 (wherein R16 is alkyl or alkoxy), $-L-S(O)_nR15$, -L-SC(O)R12,

(wherein each of L1 and L2 is methylene, oxygen or sulfur and R16 is hydrogen or alkyl), and a salt thereof, useful as a herbicide.



EUROPEAN SEARCH REPORT

Application Number

EP 88 10 3999

				EP 66 10 39
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	The present search report has	been drawn up for all claims		
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	termediate document eory or principle underlying the ir		document	